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A STUDY OF HIGH SCHOOL LEARNING ENVIRONMENTS AND THEIR IMPACT ON STUDENTS.

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HIGH SCHOOL LEARNING ENVIRONMENTS WERE ANALYZED AND COMPARED TO DETERMINE THEIR EFFECT ON STUDENT NEEDS, SATISFACTIONS, VALUES, AND ASPIRATIONS. THE MEASURES ADMINISTERED TO 2,933 SENIORS OF 11 HIGH SCHOOLS IN AN URBAN AREA OF NEW YORK STATE WERE THE HIGH SCHOOL CHARACTERISTICS INDEX (HSCI), THE STERN ACTIVITIES INDEX (SAI), AND A SPECIALLY DESIGNED QUESTIONNAIRE. RESULTS INDICATED THAT (1) THERE WERE HIGHLY SIGNIFICANT DIFFERENCES BETWEEN SCHOOLS FOR HSCI ENVIRONMENTAL "PRESS" SCORES, SMALLER BUT STILL SIGNIFICANT DIFFERENCES BETWEEN STUDENT BODIES FOR SAI "NEED" SCORES, AND ALSO DISTINCTIVE DIFFERENCES BETWEEN SCHOOLS WITH RESPECT TO INSTITUTIONAL NEED-PRESS CONGRUENCE, (2) PRESS FOR ACHIEVEMENT SEEMED TO BE ASSOCIATED WITH A CLUSTER OF VARIABLES WHICH TOGETHER DEFINE A CONDITION OF STRONG SCHOOL SPIRIT OR MORALE, FOCUSING ON THE EXISTENCE OF MANY OPPORTUNITIES FOR PARTICIPATION IN VARIED SCHOOL ACTIVITIES THAT BRING NEED SATISFACTION AND SOCIAL VISIBILITY, (3) ASPIRATION FOR COLLEGE TRAINING WAS SIGNIFICANTLY RELATED TO PRESS FOR ACHIEVEMENT EVEN WITH SOCIOECONOMIC STATUS AND SCHOLASTIC APTITUDE PARTIALED OUT, (4) DIFFERENCES IN STUDENT BODY VALUE ORIENTATIONS WERE SIGNIFICANTLY RELATED TO MANY HSCI ENVIRONMENTAL "PRESS" SCORES, AND (5) STUDENT CONTENTMENT WITH THEIR HIGH SCHOOL ENVIRONMENT WAS SIGNIFICANTLY CORRELATED WITH SEVERAL HSCI SCORES. (JH)

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FINAL REPORT
Project No. 5-8032
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U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Office of Education
Bureau of Research

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Project No. 5-8032
Contract No. OE-5-10-336

James V. Mitchell, Jr.

The research reported herein was performed pursuant to a contract with the Office of Education, U.S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

The University of Rochester

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## INTRODUCTION

In much of our discussion of educational matters it is generally assumed that the school learning environment is a potent force in determining the nature and quality of pupil motivation, the characteristics and direction of the instructional process, and the ultimate effectiveness of pupil learning. Associated with our current efforts to reduce racial imbalance in the schools, for example, there is the implicit underlying assumption that certain learning environments are more effective than others in producing desirable educational outcomes. In view of the fact that there are few who would challenge this assumption, it is strange that we do not know more about the nature and influence of the environmental press that are the most important determinants of the school learning environment. Almost all of what we do know stems from research conducted on college environments, a very recent development whose origins can be traced back only to the late 1950's (15,18,26,27). Valuable results have been secured from these studies, but most would probably agree that these results cannot be generalized beyond the college setting without considerable risk. Certainly an uncritical generalization of these results to the high school setting would be unwise, since there are certain significant features of the college setting that are not represented in the high school setting at all. It has been found, for example, that college environments tend to attract students whose need patterns are generally congruent with the environmental press of each institution (19,20,22,23). The high school student, however, has no choice in the matter; he must typically attend the local school to which he has been assigned, whether it happens to have the appropriate environmental press for fulfilling his needs or not. Thus there is even greater likelihood that the high school setting will spawn subgroups of alienated students. When considered in relation to the fact that high school students are initially more diverse with respect to scholastic aptitude, occupational goals, educational aspirations, and value orientations, the necessity for conducting definitive research on the high school setting per se becomes immediately apparent.

The present report summarizes the results of a pilot project representing one of the first attempts to analyze and compare high school learning environments and their impact on students. The study seeks generally to determine whether there are environmental press variables that distinguish high school learning environments and whether these variables can be shown to have some relationship to student behavior and development. It considers also the relationship between environmental press and student need patterns, and the further relationship of these interactions to student behavior and development. Because the general problem is so broad, it was found desirable to restrict the number of dependent (behavioral) variables to a selected few whose importance for the growth and well-being of the individual was obvious and generally accepted. Accordingly, the primary objectives that guided the conduct of the research were the following:

(1) to identify and analyze significant differences in the characteristics of high school learning environments, with particular emphasis on the "intellectual climate" of those environments;

(2) to identify and analyze significant differences in the needs of the respective student bodies;

(3) to compare the various high schools studied with respect to the relative degree of intra-school congruence between student needs and environmental characteristics for encouraging and facilitating the satisfaction of those needs;

(4) to determine the relationship of differences in each of the above to student satisfaction, values, and aspirations for future education.

During the course of the study it became evident that certain insights were being obtained about the values and limitations of the instruments employed and that the communication of these insights might also constitute an important objective of the study. It seemed desirable, then, to add a fifth objective:

(5) to assess the acquired evidence relative to the possible validity and utility of the instruments employed for future analyses of environmental characteristics and student needs at the high school level.

To implement these objectives a series of nine questions was formulated which served to specify the research operations necessary to fulfill these objectives and thus to structure the day-to-day conduct of the research. These nine questions will also serve to structure the "Results" section of this report and will not be repeated here.

The research to be reported makes considerable use of certain methods and techniques used in earlier studies of college environments. A particular debt is owed to G. G. Stern and C. R. Pace, who played critical roles in the development of two of the instruments employed in the study. The "High School Characteristics Index," which was used in the present research, is the high school level edition of the "College Characteristics Index" that was developed by Stern and Pace in the late 1950's (18) and used in several studies of the college environment (15,19,22,23,24). Both the college and high school versions of the Index yield thirty scores representing various characteristics or "press" of the school environment. Subjects respond either "True" or "False" to the items of the Index in terms of their perception of their high school environment in relation to the content of the item (e.g., "The teachers very often make you feel like a child."). Also employed in the present research was the Stern Activities Index (25), an instrument for assessing student needs. Subjects respond either "Like" or "Dislike" to the items of this Index in terms of whether they like or dislike the activity in question (e.g., "Competing with others for a prize or goal."). The basic rationale or assumption underlying this instrument is that the subject's pattern of likes and dislikes reveals his need pattern. The College Characteristics Index and the Stern Activities Index have been used very effectively in combination (19,22,23,24), for they were designed to reflect H. A. Murray's concept of "need-press" systems or themas (13), where a given need can be considered in relation to the aspects of the environment (called "press") which can either facilitate or impede the efforts of the individual to fulfil that need. Thus a subject's "need for achievement" score on the Activities Index, for example, can be interpreted in relation to the achievement "press" score on the College Characteristics Index, which would reflect the extent to which the college environment tended either to facilitate or impede the fulfilment of the subject's desire or need to achieve. For each of the thirty need scores in the Stern Activities Index there is a parallel "press" score in the College Characteristics Index that can be considered relationally in the same manner. The High School Characteristics Index enjoys exactly the same relationship to the Stern Activities Index as the college-level edition, and it was this parallel scores feature of the two instruments that provided much useful data relevant to the third objective above.

Using the instruments described above, Stern and others have conducted several fruitful studies that have led to some interesting findings and generalizations about differences in college environments. Certainly there are significant relationships between press profiles and the types of institutions sampled, with distinct differences being noted between denominational schools, private liberal arts institutions, state institutions, etc. (19,22,23). As indicated earlier, college environments seem to attract students whose need patterns are generally congruent with the environmental press of the institution they select to attend (19,20,22,23). This relationship is presumably not an artifact arising from correlations between student press scores and their corresponding needs scale scores, for McFee (9) reports little or no relationship for within-school correlations between the two sets of variables. There are intra-institutional differences in press within the larger institutions, with students majoring in different fields apparently being subject to distinctive kinds of press (23). These differences in environmental press are of more than theoretical interest alone, for they appear to have a demonstrable influence on student decision-making and other subsequent behavior. There is evidence from some research, for example, that college press influence student motivation to seek advanced training (27,29) and that they are related also to changes in study plans of talented students (28).

Since the development of the original Stern and Pace instruments, several alternative methods of assessing the college environment have appeared. These new developments have apparently been motivated in part by a lingering doubt that student perception of environmental press are in fact independent of student needs or other personality characteristics, or by an indisposition to believe that such student perceptions are the best or most objective vehicle for assessing college environments or that they necessarily reveal the entire picture. Astin, for example, has developed an "Environmental Assessment Technique," which seeks to assess the college environment in terms of eight characteristics of the student body: its size, average intelligence, and six "personal orientations" based on the proportions of students in each of six classes of major fields (1,3). Astin has also developed an "Inventory of College Activities," which attempts to seek data on specific behaviors reported by students that would play a role in establishing the environmental characteristics of an institution (e.g., "Argued with a teacher in class;" "Hours per week spent studying.") (2). At the present time these techniques have not been adapted for use at the high school level.

Although there has been much creative work on the college environment in the last eight years, this general lack of instrumentation at the high school level has proved a great impediment to similar progress at that level. Although Pace (16) has recently developed a new and presumably more reliable and efficient instrument for the measurement of college characteristics through student perceptions (the College and University Environment Scales), there is as yet no high school level edition available for general use or even for research purposes. The only instrument presently available for the analysis of high school environments is the High School Characteristics Index (25), which was one of the instruments employed in the research to be reported here.

Despite its uniqueness as an instrument for assessing the high school environment, even the High School Characteristics Index has seen little application or use. Herr (6) used it to determine whether environmental perceptions were related to such variables as intelligence, grade average, and extracurricular participation. Kasper, Munger, and Myers (7) used it to compare student perceptions of their school environments in schools with good and poor guidance facilities. The only study which has any direct relevance to the present one is one by G. Stern (21). Stern had over 2000 entrants at a major eastern university complete the High School Characteristics Index, with instructions to fill this out in relation to the high school from which they graduated. They were also asked to fill out the College Characteristics Index in terms of their expectations for the university they were entering. Subjects were 103 entrants from 63 different private preparatory schools, 89 entrants from 42 different parochial schools, 96 entrants from a local public high school, and 29 entrants from a distant metropolitan high school. The most important finding for present purposes was that there were significant differences between the four abovementioned groups with respect to how they perceived their high school environments. Stern's intent, however, was to compare students' perceptions of their high school environments with their expectations for university life, and his design was therefore not comparable to that employed here. Thus his subjects gave their retrospective impressions of their high school environments, they represented some 107 widely scattered institutions, with an average of 3 representatives per institution, and no attempt was made to relate environmental characteristics to student needs, satisfactions, values, and aspirations for the future.

It is apparent from this brief review of the literature that research on college environments has proceeded rapidly both in terms of instrumentation and results, but that research on high school learning environments and their impact on students is virtually nonexistent. It is hoped that the present research will help in some small measure to remove this significant gap in our knowledge and understanding. The next section will describe the methods that were used in this research to attain this goal in terms of the objectives that were defined earlier.

# METHOD

Because the present research was structured in terms of five objectives and nine related questions, there were several different methods and statistical analyses employed. The details of these analyses are better understood in relation to the questions they were designed to answer, and these details will therefore be presented with the relevant question in the "Results" section of the report. The present "Method" section will include an overview of the schools that participated in the study, the instruments that were administered, the method of administration employed, and the general procedures that were used in analyzing and interpreting the data.

One of the purposes of the USOE Small Contract Program is to support "Pilot or exploratory studies designed to obtain a clear indication of the feasibility and potential value of a more extensive research or development effort on the same or similar problems (30, p. 21). The present research, which was funded as a part of this Small Contract Program, is a good example of such a pilot or exploratory study. Because of the exploratory nature of the study and the necessary limitation on funds, there were practical limitations with respect to the number of schools that could be included in the study. Ultimately eleven schools were selected. Nine of these constituted all of the public high schools in a city of 319,000 population. These nine high schools provided a unique opportunity to compare differences in high school environments within a typical city system. Eight of these were comprehensive-type high schools of varying average socioeconomic status and varying within-school socioeconomic homogeneity. The ninth school was a technical and industrial school with an all-male enrollment. Presumably this school had a student population that was selected in terms of intellectual aptitude, with the lowest quartile refused admission. In actuality, however, this school ranked among the three lowest on intellectual aptitude.

In order to represent other commonly found types of high schools, two other high schools were included in the study. One was a suburban high school which served an upper-middle class community that is generally conceded to be one of the two highest status communities in a metropolitan area. The great majority of the fathers of students attending this school are involved in various kinds of professional or managerial occupations. The other school was a Catholic high school organized on a "co-institutional" basis. The "co-institutional" organization (as opposed to a co-educational one) is one in which the boys and girls are segregated into separate classrooms in separate wings of the school building, but who then mingle freely in the lunchroom or after school when they participate in extracurricular activities.

No claim is made for the representativeness of this sample with respect to the nation's high schools as a whole. It is obvious, however, that because of the exploratory nature of this study a strong attempt was made to include a fairly wide variety of high schools that would differ with respect to several dimensions, being public and parochial, urban and suburban, comprehensive and technical, of low, high, and mixed socioeconomic status, etc. The sample chosen seems to achieve this goal rather admirably, and has the additional advantage of including for comparative purposes all of the public high schools of an entire city system.

It was decided early in the study to use as subjects all of the students in each of the senior classes of the eleven schools participating. The decision to use seniors was made with full knowledge of both the advantages and disadvantages accruing from such a policy. The four major advantages, which were perceived as outweighing any possible disadvantages, were the following: (1) The practical exigencies of time and funds made compromise necessary; if all four classes of each high school were to be tested, this would necessarily limit the number of schools that could be included. (2) It was felt that seniors would be better able to cope with the verbal requirements of an instrument like the Stern Activities Index, which was originally developed for college students. This would be especially true of the students who attend schools in impoverished areas of the community. (3) High school seniors have had more time to observe the environment of their school and to participate in it and feel its effects, and because they are probably the most influential class in determining the student component of the academic environment, they are closest to the sources of information desired. (4) High school seniors are temporally closer to the point at which they must make decisions about further training or terminating their training, and these decisions constitute an important class of data in the present research.

The one disadvantage of employing seniors as subjects, of course, is that then the sample does not include previous dropouts, who might be hypothesized to have somewhat different attitudes about their school environment. It might be questioned, however, whether these dropouts can be expected to make objective judgments about their school environments. In one study (12), for example, it was found that students ranking high in nonconformity tendencies were more likely than the typical student to perceive the press of abasement and aggression in their school environment. If one can assume that the dropout group is likely to have more than its share of nonconformists, the objectivity of their perceptions could become a real issue. Thus one can only have a mixed reaction to the inclusion of the dropout group.

The total number of subjects included in the study was 2933. The numbers of subjects in each high school ranged from 174 to 406, with an average of 267. Except for the all-male enrollment at the technical high school, the distribution of the sexes within each high school was quite similar. The percentage of boys in each high school of the ten remaining ranged from 42% to 50%, with an average of 47%. These figures would vary somewhat because of incomplete or spoiled forms, but because all three instruments used were administered at the same time under carefully controlled conditions, the numbers of unusable forms or incomplete cases were kept to a minimum. Attendance of all seniors at the testing session was required in all schools, and therefore the attendance rate was quite high. Because of the complexity of the scheduling problem, however, no effort was made to return to each school to test the absentees.

Three instruments were administered to all eleven senior classes: the High School Characteristics Index (25), the Stern Activities Index (25), and a questionnaire developed by the author that was designed to secure information about student satisfaction and contentment with the high school environment, student values, student aspiration for future education or training, the occupational and educational status of parents, and other data. These three instruments may be seen in Appendix A, B, and C. They were administered in one session in exactly the same order for all eleven high schools: The High School Characteristics Index was administered first, the questionnaire second, and the Stern Activities Index third. It was felt that the interposition of the questionnaire between the two Stern instruments would help to relieve the monotony of the very similar format that characterized the two Stern instruments. The total time for testing was approximately 2½ hours, with virtually all students completing the three instruments within that period of time. The author administered the test instruments in nine of the schools with the help of a graduate assistant and a few proctors furnished by the individual schools. The graduate assistant, who was a school psychologist of considerable maturity and experience, was asked to administer the instruments to the other two schools when scheduling conflicts made it impossible to follow the usual pattern. In every case, however, the person administering the instruments read the following instructions to the students:

> "The questionnaires you will be filling out this morning will also be filled out by the senior classes of many other high schools in this area. From the questionnaires we will obtain some important information about what this school is like as the students see it - that is, from the student's point of view. In addition, we will obtain information about what students like and dislike and what kind of life they would like to live in the future and how much education or training they would like to have. But the purpose of all the questionnaires is to find out as much as we can about how the student sees things - and then to study the information we get from the class as a whole to help us understand students better and to help make their high school experiences even more valuable and pleasant. Please realize, then, that this is your opportunity to tell how you see things and how you feel about them, and make the most of your opportunity.
>
> Answer all questions honestly and exactly as you think they should be answered. No one from this school - not the principal, not the teachers, nor anyone else - will see what you as an individual put down on any of these questionnaires. I give you my word on that. What they will see is how the senior class as a whole answered these questions - and they will use this information, as I said before, to make this high school an even better place to be.
>
> Please open your envelopes now. Notice that there are three questionnaires and a pencil in the envelope. Use the pencil on all of the tests. Notice that the questionnaires are numbered 1, 2, or 3 in red pencil in the upper right hand corner. Fill in the questionnaire numbered 1 first of all, then number 2, and finally number 3. Questionnaires 1 and 3 have answer sheets tucked inside the questionnaires, and all your answers should be marked on these answer sheets. Please make no marks on the questionnaire booklets in the case of questionnaires 1 and 3. For the questionnaire numbered 2 you will mark your answers directly on the questionnaire. All this will be clear from the directions on each questionnaire.

> Read the instructions on each questionnaire and on the answer sheet, and then write in your name and the other information called for on the answer sheet. After you have finished questionnaire 1, go right on to questionnaire 2, and then to questionnaire 3. Answer each and every item, but work quickly, since we have only a limited amount of time."

As indicated in the instructions, responses to the High School Characteristics Index (hereafter referred to as the HSCI) and the Stern Activities Index (hereafter referred to as the SAI) were recorded on separate answer sheets. These answer sheets were used as input data for an IBM 1232 Optical Page Reader which the Rochester Telephone Corporation kindly allowed the project staff to use during off-hour periods. With the help from IBM personnel the 1232 Reader was programmed to punch all 300 responses of the HSCI on two IBM cards, with two responses per column. The same programming procedure was also followed for the 300 responses of the SAI. These IBM cards were then used as input data for all further scoring procedures. University of Rochester computing personnel developed a program for the IBM 7074 computer at the University which scored the responses on the cards according to the key furnished with the manual (25). A new set of cards was then punched which included for each case the 30 original scale scores, a set of first-order "factor" scores, and a set of second-order "factor" scores (25). The same procedure was followed for the SAI as for the HSCI. Responses from the questionnaire developed by the author were recorded on data sheets by clerks and then punched on IBM cards. All further analyses involved data input from these cards or from scores and responses transferred to magnetic tape, utilizing the University of Rochester IBM 7074 computer. A short paragraph of this type can only describe the general procedures that were followed; it cannot reveal the tremendous amount of work that was involved, nor the splendid cooperative efforts that characterized IBM and Computing Center contributions to this research. A great debt of gratitude is also owed to the schools that participated in the study; it is hoped that the score and response data returned to them can be useful in planning for the future.

Socioeconomic and scholastic aptitude data were also used in the analyses. The socioeconomic data were secured from the student's description of his father's occupation as indicated at the top of the first page of the Student Questionnaire (Appendix C). Each occupation was assigned a rating from one to seven in accordance with the seven-point rating scale for occupations described in the

Warner, Meeker, and Eells book, Social Class in America (31, p. 140). This is one of the four seven-point rating scales which contribute to the "Index of Status Characteristics" described in that book. The occupation scale correlates so highly with the full scale that its use as a convenient single index seems justified. Scholastic aptitude data were secured from school records. Fortunately, ten of the schools in the study had administered Form A of the Differential Aptitude Tests (4) to the respective classes of 1966 in the fall of 1962. Raw scores and percentile ranks were therefore available for the VR + NA scales of the battery (verbal reasoning plus numerical ability), which constitute the test authors' recommendation for an index of general scholastic aptitude. The school that did not have DAT scores available was the Catholic high school; it had, however, administered the Otis Gamma test of mental ability (14) to the class of 1966 in the fall of 1962, and the IQ scores from that instrument were used wherever possible or appropriate in lieu of DAT scores.

As indicated in the beginning of this discussion of methods, the details of the statistical analyses employed are best understood in relation to the nine specific questions they were designed to answer, and these details will therefore be presented with the relevant question in the "Results" section of the report. In terms of the objectives of the research as these were defined in the introduction, analysis of variance procedure was obviously appropriate for objectives 1 and 2, standard scores computed across schools and then averaged for individual schools furnished a common basis for the need-press comparison required by objective 3, and correlational techniques were appropriate for the attainment of objective 4. Further explanation will be reserved for the section following.

# RESULTS

The first objective of this research, it will be recalled, was to identify and analyze any differences that might be discerned among the high school environments represented in the sample. The first of the nine questions which structured the conduct of the research related directly to the attainment of this objective and defined the task in operational terms. It raised the question:

Are there significant differences in high school environments as perceived by students and reflected in the various environmental "press" scores of the High School Characteristics Index?

To provide evidence relevant to this question, means were computed for each school for each of the 30 scales of the High School Characteristics Index. The significance of the differences among school means for each scale was then assessed by analysis of variance. The results of this analysis are shown in Table 1. The same analysis of variance procedure was followed for the first and second order factor scores whose derivation and computation are described in the Stern manual (25). The results of this analysis are shown in Table 2. To facilitate interpretation of scores the descriptions of the 30 scales provided in the manual is presented in Appendix D and that for the first and second order factor scores is presented in Appendix E.

There can be little doubt that there are highly significant differences between means for each of the score categories without exception. This is true of all 30 scale scores and all first and second order factor scores. In certain of these cases application of Bartlett's test of homogeneity of variances also yielded significant F ratios, but inspection of the standard deviations in Appendix F and G reveals that the differences are not great and are not cause for concern. Lindquist, in reviewing the Norton study on the influence of heterogeneity of variances on the F test (8), has concluded that such heterogeneity does not have marked influence on the final results of an analysis of variance. He advises only that "...where marked (but not extreme) heterogeneity is expected, it is desirable to allow for the discrepancy by setting a slightly higher "apparent" level of significance for this test than one would otherwise employ..." (8, p. 83). Accordingly, the .001 level of significance was established as the criterion for the present research in order to eliminate any possibility of a Type I error. All scale scores and factor scores of the High School Characteristics Index attained this level of significance.

Table 1

School Means and F Ratios for the 30 Scales of the High School Characteristics Index

| Scale | School Means | | | | | | | | | | | F | p |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | | |
| 1. Abasement-Assurance | 5.09 | 5.50 | 4.11 | 4.77 | 4.51 | 3.67 | 5.31 | 4.39 | 5.22 | 4.19 | 4.15 | 19.13 | .001 |
| 2. Achievement | 5.17 | 5.05 | 4.92 | 5.27 | 5.13 | 5.16 | 5.45 | 6.25 | 4.85 | 6.57 | 7.04 | 49.22 | .001 |
| 3. Adaptability-Defensiveness | 4.96 | 4.89 | 4.35 | 4.22 | 4.86 | 4.47 | 5.27 | 4.63 | 5.02 | 4.98 | 5.88 | 28.47 | .001 |
| 4. Affiliation-Rejection | 4.99 | 4.12 | 4.63 | 4.59 | 4.55 | 4.56 | 5.08 | 6.19 | 4.37 | 6.04 | 7.18 | 72.27 | .001 |
| 5. Agression-Blame Avoidance | 3.78 | 5.16 | 4.03 | 4.48 | 4.63 | 5.51 | 3.98 | 3.84 | 5.48 | 3.96 | 1.50 | 79.80 | .001 |
| 6. Change-Sameness | 4.38 | 5.15 | 4.67 | 5.06 | 4.81 | 5.84 | 4.75 | 5.19 | 4.66 | 4.84 | 6.48 | 46.73 | .001 |
| 7. Conjunctivity-Disjunctivity | 5.98 | 5.44 | 6.40 | 6.46 | 6.38 | 6.56 | 6.00 | 6.94 | 5.71 | 6.75 | 7.33 | 19.46 | .001 |
| 8. Counteraction-Inferiority Avoidance | 5.60 | 5.15 | 5.83 | 5.53 | 5.96 | 5.90 | 6.02 | 5.81 | 5.56 | 6.22 | 5.90 | 9.50 | .001 |
| 9. Deference-Restiveness | 4.47 | 4.49 | 4.31 | 4.82 | 5.04 | 4.83 | 4.44 | 4.65 | 4.70 | 4.06 | 5.41 | 16.58 | .001 |
| 10. Dominance-Tolerance | 7.12 | 6.65 | 5.61 | 6.31 | 7.10 | 6.52 | 7.23 | 6.97 | 7.22 | 6.45 | 5.95 | 19.97 | .001 |
| 11. Ego Achievement | 4.86 | 4.40 | 5.05 | 4.91 | 4.63 | 5.35 | 5.30 | 5.39 | 4.07 | 5.02 | 5.48 | 12.61 | .001 |
| 12. Emotionality-Placidity | 5.57 | 5.28 | 5.49 | 5.58 | 5.61 | 5.47 | 5.48 | 5.57 | 4.86 | 5.29 | 6.61 | 25.05 | .001 |
| 13. Energy-Passivity | 4.12 | 3.57 | 5.15 | 4.37 | 4.65 | 4.67 | 4.35 | 5.00 | 3.15 | 4.87 | 6.64 | 52.44 | .001 |
| 14. Exhibitionism-Inferiority Avoidance | 4.69 | 4.25 | 4.65 | 5.08 | 4.82 | 5.19 | 5.19 | 5.67 | 4.37 | 6.09 | 6.56 | 47.12 | .001 |
| 15. Fantasied Achievement | 4.32 | 4.47 | 4.59 | 4.46 | 4.08 | 4.61 | 4.48 | 4.52 | 4.31 | 4.69 | 4.07 | 4.85 | .001 |
| 16. Harm Avoidance-Risktaking | 3.41 | 3.59 | 3.93 | 4.21 | 4.20 | 3.96 | 3.83 | 3.86 | 3.68 | 3.58 | 4.27 | 8.64 | .001 |
| 17. Humanities, Social Science | 2.52 | 2.64 | 2.16 | 3.03 | 2.55 | 3.84 | 3.14 | 3.68 | 2.59 | 3.66 | 3.72 | 24.08 | .001 |
| 18. Impulsiveness-Deliberation | 5.75 | 5.99 | 5.68 | 5.64 | 5.58 | 5.78 | 5.68 | 5.73 | 5.83 | 6.13 | 4.72 | 16.78 | .001 |
| 19. Narcissism | 7.24 | 6.37 | 5.83 | 6.80 | 7.16 | 6.06 | 7.01 | 7.12 | 5.94 | 7.36 | 8.28 | 42.26 | .001 |
| 20. Nurturance-Rejection | 4.88 | 3.81 | 4.60 | 5.48 | 4.67 | 4.73 | 4.62 | 5.07 | 4.04 | 4.35 | 7.29 | 66.96 | .001 |
| 21. Objectivity-Projectivity | 5.63 | 5.00 | 6.56 | 6.03 | 6.08 | 6.89 | 5.57 | 6.40 | 5.61 | 6.43 | 6.94 | 18.29 | .001 |
| 22. Order-Disorder | 5.47 | 5.60 | 5.56 | 5.51 | 5.78 | 5.11 | 5.45 | 5.63 | 4.85 | 5.34 | 7.18 | 41.18 | .001 |
| 23. Play-Work | 6.28 | 4.92 | 5.41 | 5.15 | 5.29 | 5.31 | 5.51 | 6.40 | 5.13 | 6.38 | 6.55 | 34.91 | .001 |
| 24. Practicalness-Impracticalness | 6.71 | 6.65 | 7.41 | 6.88 | 7.08 | 7.02 | 6.82 | 6.80 | 6.46 | 6.52 | 6.87 | 6.49 | .001 |
| 25. Reflectiveness | 4.82 | 4.41 | 4.14 | 5.19 | 4.83 | 5.28 | 4.76 | 5.38 | 4.45 | 4.94 | 5.45 | 14.14 | .001 |
| 26. Science | 4.43 | 4.59 | 5.27 | 5.02 | 4.68 | 5.27 | 4.62 | 5.35 | 4.32 | 5.21 | 5.48 | 11.55 | .001 |
| 27. Sensuality-Puritanism | 4.43 | 2.77 | 3.14 | 3.33 | 3.18 | 3.53 | 2.71 | 3.69 | 2.86 | 3.35 | 4.45 | 34.60 | .001 |
| 28. Sexuality-Prudishness | 7.39 | 7.32 | 4.00 | 7.44 | 7.13 | 7.53 | 7.19 | 7.45 | 7.03 | 6.61 | 5.46 | 104.79 | .001 |
| 29. Supplication-Autonomy | 3.80 | 3.40 | 4.66 | 4.00 | 4.54 | 4.68 | 4.07 | 4.60 | 3.57 | 4.45 | 5.83 | 36.90 | .001 |
| 30. Understanding | 5.22 | 5.02 | 5.49 | 5.31 | 5.38 | 5.76 | 5.48 | 6.03 | 4.75 | 5.18 | 6.34 | 19.19 | .001 |

Table 2

School Means and F Ratios for the First and Second Order Factor Scores of the High School Characteristics Index

| Scale | School Means | | | | | | | | | | | F | p |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | | |
| First Order Factor Scores | | | | | | | | | | | | | |
| 1. Work-Play | 13.99 | 15.35 | 18.84 | 15.98 | 16.20 | 15.34 | 15.46 | 14.28 | 15.70 | 14.46 | 17.54 | 31.64 | .001 |
| 2. Non-Vocational Climate | 22.81 | 21.13 | 21.51 | 21.89 | 20.42 | 22.11 | 20.74 | 21.93 | 21.83 | 22.44 | 19.11 | 20.23 | .001 |
| 3. Aspiration Level | 19.52 | 19.79 | 20.57 | 20.35 | 20.23 | 22.10 | 20.73 | 21.55 | 19.28 | 20.94 | 22.79 | 21.70 | .001 |
| 4. Intellectual Climate | 21.30 | 19.31 | 19.52 | 21.32 | 20.02 | 23.02 | 20.56 | 23.30 | 18.96 | 21.81 | 24.03 | 22.09 | .001 |
| 5. Student Dignity | 13.43 | 12.86 | 16.84 | 14.96 | 14.48 | 16.70 | 13.04 | 15.04 | 13.17 | 15.79 | 16.85 | 23.20 | .001 |
| 6. Academic Climate | 6.94 | 7.23 | 7.43 | 8.05 | 7.23 | 9.11 | 7.75 | 9.03 | 6.90 | 8.87 | 9.20 | 19.17 | .001 |
| 7. Academic Achievement | 26.09 | 24.23 | 27.80 | 26.94 | 27.51 | 28.05 | 27.30 | 30.05 | 24.03 | 29.60 | 33.24 | 44.61 | .001 |
| 8. Self Expression | 19.23 | 17.51 | 20.35 | 19.94 | 19.70 | 20.68 | 20.33 | 21.63 | 16.45 | 21.27 | 25.29 | 54.91 | .001 |
| 9. Group Life | 18.64 | 16.23 | 18.24 | 18.30 | 18.61 | 18.44 | 19.03 | 20.54 | 17.00 | 19.83 | 26.18 | 103.91 | .001 |
| 10. Academic Organization | 33.64 | 30.74 | 32.40 | 33.47 | 34.16 | 31.27 | 33.25 | 34.78 | 29.89 | 33.42 | 41.97 | 76.77 | .001 |
| 11. Social Form | 30.49 | 26.65 | 25.80 | 27.97 | 29.08 | 27.09 | 29.64 | 30.25 | 27.35 | 29.51 | 33.94 | 69.11 | .001 |
| 12. Play-Work | 26.01 | 24.65 | 21.16 | 24.02 | 23.80 | 24.66 | 24.55 | 25.72 | 24.30 | 25.54 | 22.46 | 31.64 | .001 |
| 13. Vocational Climate | 27.19 | 28.87 | 28.49 | 28.11 | 29.58 | 27.89 | 29.26 | 28.07 | 28.17 | 27.56 | 30.89 | 20.22 | .001 |
| Second Order Factor Scores | | | | | | | | | | | | | |
| 14. Intellectual Climate | 143.31 | 137.41 | 152.85 | 149.42 | 145.80 | 157.11 | 145.90 | 156.82 | 136.32 | 155.18 | 168.05 | 39.01 | .001 |
| 15. Non-Intellectual Climate | 155.20 | 144.64 | 146.43 | 151.80 | 154.92 | 150.04 | 156.04 | 160.99 | 143.16 | 157.12 | 180.74 | 91.50 | .001 |
| Interpretive Data | | | | | | | | | | | | | |
| 16. Socioeconomic Status | 3.56 | 4.13 | 4.75 | 4.83 | 4.80 | 5.27 | 4.22 | 3.52 | 4.41 | 2.10 | 3.94 | | |
| 17. DAT (VR + NA) | 47.56 | 43.77 | 40.57 | 44.54 | 41.72 | 34.25 | 43.86 | 48.32 | 40.27 | 52.81 | 48.85 | | |

In both Tables 1 and 2 schools 1 through 9 are the earlier described public high schools of a city school system. To provide additional data for interpretive purposes, Table 2 includes the average DAT VR + NA raw score for each school and also the average socioeconomic status of the students in the school. (The lower values represent the higher socioeconomic status). It can be seen from these data that the students from schools 1 and 8 have the highest average socioeconomic status of the schools in the city system, but that they still rank much below school 10, the suburban school, in terms of socioeconomic status. School 6 has the lowest average socioeconomic status and also the lowest average DAT score. The school is located in one of the most economically and culturally impoverished sections of the city. Negro students constitute 40% of the senior class population and doubtlessly a higher percentage of the school as a whole. The school with the next lowest average DAT score is school 3, the technical and industrial high school. School 5 has a large proportion of students whose parents are of Italian extraction. School 8 is the most heterogeneous with respect to socioeconomic status as well as being one of the two highest in the city system in terms of average socioeconomic status. Schools 2, 4, 6, and 9 probably have the highest proportion of Negro students. As indicated earlier, school 10 is the high status suburban school, while school 11 is the "co-institutional" Catholic school described in the previous section. It is hoped that the presentation of identifying data of this type will help to establish a structure or context for the results and interpretations to follow.

Certain of the differences observed in Table 1 deserve special comment. The very high F ratio associated with the Sexuality scale (#28) must be dismissed as an artifact of school organization, since it is apparent that the all-male enrollment in the technical and industrial school (school 3) and the "co-institutional" setting of the Catholic school (school 11) were limiting of heterosexual contact and thus produced unusually deviant scores for those schools. But there appear to be some valid and significant differences in the extent to which students perceive elements of aggression in their environment. Certain schools (schools 2, 6, and 9) rank especially high for this characteristic, while the Catholic school (school 11) ranks the lowest of all.

When differences of this nature appear, it is important to be able to specify in some operational sense the nature of the items that contributed to these differences. With only ten items per scale it is not difficult to identify quickly the ten for any given scale, and instructions are given in Appendix D for accomplishing this. Perhaps even more beneficial is the identification of items within the scale that demonstrated the widest inter-school differences in terms of the greatest range of endorsement, and Table 3 provides such evidence. Table 3 lists the 30 items within the HSCI that had the greatest range of endorsement. It is interesting to note the nature of the three Aggression scale items that are included in this top 30 (items 5, 95, and 215). All three of these refer to student-instigated aggression, two of them toward school property, and one toward one another as evidenced in student fistfights. Indeed, most of the items in the Aggression scale refer to student-instigated aggression, and those that do not tell a somewhat different story. For example, item 275 ("Teachers seldom use physical punishment") had this pattern of endorsement for schools 1 through 11: 91%, 85%, 78%, 87%, 82%, 87%, 89%, 93%, 86%, 90%, and 66%. The lowest percentage of endorsement is for the last school, the same Catholic school that ranked so low on the Aggression scale. Also interesting is the pattern of endorsement for item 185 ("When students dislike a teacher, they let him know it."). Again for schools 1 through 11 the pattern of endorsement is 62%, 58%, 68%, 58%, 62%, 66%, 60%, 50%, 65%, 65%, and 26%. Apparently the students at the Catholic school are less likely to show their dislike or aggressive feelings toward their instructors.

The Catholic high school environment appears to be a well-controlled one in which destruction of school property, student fistfights, and expression of hostility toward instructors is simply not tolerated, and the constant presence of teaching nuns and brothers probably constitutes a rather potent spiritual reinforcement to help students desist from such activities. Any aggression by students is not tolerated, and any faculty behavior that might suggest aggression, physical or otherwise, is apparently accepted as a necessary aspect of school requirements for obedience. At schools 2, 6, and 9 a very different situation seems to prevail. Student destruction of school property and student aggression toward one another are apparently characteristic of the school environment, whether the faculty makes an effort to control it or not. But there is no evidence that the faculties or administrative staffs are sources of aggression in the environment, unless one wishes to argue that the faculties are somehow responsible for student frustrations that then lead to student aggression; the source of the aggression, whatever its psychological origins, appears to be in the student body itself.

Another interesting set of differences appears for the Affiliation-Rejection scale. Schools 8, 10, and 11 rank highest in terms of affiliation press. School 1, although it has the same

## Table 3

### HSCI Items Having the Greatest Range of Endorsement*

| Item | Range of Endorsement | Scale | School Endorsement | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 5. School property is seldom damaged by students. | 62 | 5 | 60 | 39 | 55 | 47 | 44 | 30 | 58 | 55 | 37 | 46 | 92 |
| 14. Competition is keen for parts in school plays. | 66 | 14 | 20 | 27 | 20 | 47 | 36 | 40 | 53 | 54 | 17 | 74 | 83 |
| 23. Students really get excited at an athletic contest. | 59 | 23 | 57 | 37 | 73 | 59 | 46 | 76 | 60 | 84 | 50 | 85 | 96 |
| 27. Students sometimes get a chance to hear music in the lunchroom or during other free periods. | 92 | 27 | 94 | 7 | 7 | 6 | 3 | 10 | 2 | 23 | 15 | 4 | 49 |
| 34. There is a lot of school spirit. | 90 | 4 | 18 | 6 | 56 | 17 | 13 | 18 | 35 | 53 | 5 | 53 | 95 |
| 53. There is a lot of student enthusiasm and support for the big school events. | 83 | 23 | 69 | 15 | 62 | 31 | 37 | 28 | 50 | 58 | 22 | 66 | 98 |
| 58. Boys and girls seldom sit at separate tables in the school cafeteria. | 65 | 28 | 46 | 60 | 2 | 67 | 50 | 61 | 46 | 49 | 30 | 12 | 38 |
| 76. Fire drills and civil defense drills are held regularly. | 84 | 16 | 20 | 87 | 94 | 89 | 86 | 92 | 92 | 89 | 84 | 88 | 10 |
| 95. The desks are all cut up from doodling with knives and pencils. | 69 | 5 | 57 | 54 | 60 | 62 | 70 | 72 | 58 | 48 | 63 | 56 | 3 |
| 101. Boy-girl relationships are simple and rarely become involved. | 60 | 11 | 36 | 36 | 1 | 48 | 53 | 50 | 38 | 38 | 53 | 34 | 61 |
| 110. Students often run errands or do other personal services for the principal and teachers. | 78 | 20 | 89 | 77 | 82 | 82 | 93 | 15 | 84 | 90 | 84 | 42 | 81 |
| 140. There is a lot of interest here in projects for collecting packages of food or clothing to help out others. | 71 | 20 | 50 | 74 | 13 | 43 | 17 | 19 | 21 | 21 | 24 | 58 | 84 |
| 145. Although many students may attend church here, there is little real interest in the basic meaning of religion. | 60 | 25 | 69 | 71 | 64 | 64 | 65 | 65 | 58 | 56 | 73 | 68 | 13 |
| 148. Boys and girls often get together between classes, during lunch hour, etc. | 95 | 28 | 96 | 28 | 1 | 93 | 93 | 93 | 94 | 95 | 87 | 87 | 58 |

Table 3 (continued)

| Item | Range of Endorsement | Scale | School Endorsement | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 154. Students seldom get out and support the school athletic teams. | 79 | 4 | 73 | 85 | 62 | 80 | 72 | 66 | 64 | 29 | 80 | 26 | 6 |
| 155. Student arguments often turn into fights. | 58 | 5 | 34 | 51 | 54 | 45 | 54 | 62 | 33 | 29 | 49 | 29 | 4 |
| 166. Quite a bit of smoking and drinking goes on among students. | 61 | 16 | 86 | 86 | 69 | 74 | 66 | 77 | 76 | 86 | 90 | 92 | 31 |
| 170. Students try in all sorts of ways to be friendly, especially to newcomers. | 60 | 20 | 48 | 34 | 45 | 55 | 48 | 47 | 53 | 57 | 30 | 20 | 80 |
| 172. The school building and grounds often look a little untidy. | 63 | 22 | 24 | 37 | 51 | 41 | 31 | 73 | 43 | 44 | 62 | 16 | 10 |
| 175. Student newspapers and magazines often carry short stories and poems by students. | 61 | 25 | 81 | 76 | 28 | 84 | 89 | 83 | 70 | 80 | 80 | 70 | 55 |
| 178. There are several popular spots where a crowd of boys & girls can always be found. | 87 | 28 | 82 | 77 | 2 | 78 | 80 | 85 | 82 | 89 | 81 | 84 | 75 |
| 182. Most students around here expect to go on to college. | 64 | 2 | 75 | 67 | 33 | 65 | 47 | 39 | 76 | 81 | 70 | 95 | 97 |
| 184. There is little interest in school clubs and social groups. | 67 | 4 | 53 | 58 | 66 | 58 | 73 | 59 | 51 | 37 | 64 | 25 | 6 |
| 214. Most students get together often in particular soda fountains or snack bars. | 72 | 4 | 76 | 65 | 42 | 63 | 88 | 87 | 72 | 75 | 85 | 76 | 16 |
| 215. There are frequent fights in the lunchroom or on the school grounds. | 60 | 5 | 21 | 38 | 34 | 30 | 64 | 59 | 18 | 34 | 61 | 21 | 4 |
| 228. There is much shouting and yelling in the halls and cafeteria. | 77 | 18 | 56 | 77 | 49 | 64 | 62 | 81 | 63 | 67 | 85 | 57 | 8 |
| 234. Many teachers here stress the practical uses of their subjects in helping students to get a good job. | 64 | 24 | 55 | 56 | 84 | 72 | 68 | 75 | 66 | 60 | 50 | 20 | 63 |
| 245. The wash rooms are always a mess because the students throw paper around. | 61 | 5 | 24 | 63 | 22 | 52 | 20 | 44 | 42 | 39 | 61 | 24 | 2 |

Table 3 (continued)

| Item | Range of Endorsement | Scale | School Endorsement | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 254. There is little interest here in student dramatic or musical activities. | 68 | 14 | 67 | 75 | 78 | 54 | 70 | 53 | 53 | 38 | 76 | 27 | 10 |
| 267. There are no comfortable seats in this school where students can sit and relax. | 62 | 27 | 25 | 85 | 81 | 85 | 79 | 72 | 87 | 81 | 86 | 82 | 81 |
| 282. Very few things around here arouse much excitement or feeling. | 58 | 12 | 59 | 73 | 58 | 61 | 69 | 58 | 62 | 51 | 76 | 46 | 18 |

*Note - All figures under "Range of Endorsement" and "School Endorsement" are percentages. "Range of Endorsement" is found by subtracting the lowest school percentage figure from the highest. The numbers listed under "Scale" are the same numbers associated with scale titles in Table 1.

average socioeconomic status and DAT score as school 8, displays quite a different pattern from school 8 with respect to this dimension. Schools 2 and 9 rank lowest. An examination of the items in this scale listed in Table 3 suggest that the differences in average score here may be especially reflective of differences in school spirit and interest in school activities. For example, item 34, which relates directly to school spirit, ranges in endorsement from 95% for school 11 to 5% for school 9. Again the difference between school 1 and 8 appears, with endorsement percentages of 18 and 53% respectively. Item 154, though stated negatively, shows a similar pattern. Item 214 seems to show a somewhat different pattern, especially for school 11, but this is probably because the students at school 11 come from many different parts of the city instead of the immediate neighborhood surrounding the school, and also because there are no soda fountains or snack bars in the immediate area surrounding the school that could serve as student hangouts. The endorsement pattern for item 184, relating to interest in school clubs and social groups, gives evidence of greater interest in schools 8, 10, and 11. It is interesting that differences in school spirit and its apparent corollary, interest and participation in school activities, accounts for wide differences between schools. One is led to conjecture whether differences in the endorsement pattern for many items is not influenced by a "spread of effect" factor which is a function of school morale and spirit, and which affects student perception of many different aspects of the school environment.

Significant differences can also be noted for the Nurturance-Rejection scale. Here the highest-ranking schools are schools 4, 8, and 11, while the lowet-ranking are schools 2 and 9. School 10, the suburban school, did not rank particularly high on this scale, and it is interesting to examine student responses to item 170 on this scale (Table 3). On this item concerning student friendliness to other students, the suburbanites rate themselves lower than any other group. One wonders whether the sense of rejection is not felt more strongly here than at other schools.

Another intriguing set of differences appears for the press for Achievement scale. Schools ranking highest on this scale are schools 8, 10, and 11, while the lowest-ranking schools are schools 3 (the technical and industrial school) and school 9. School 1, similar in socioeconomic status and average DAT score to school 8, apparently does not motivate its students toward academic excellence in the same way as school 8 - at least in the eyes of the students it does not. Item 182 from this scale (Table 3) shows an interesting pattern of endorsement. In terms of student expectation of college attendance, schools 10 and 11 rank very high, with school 8 close behind. School 11, although bested in socioeconomic status by schools 1, 8, and 10, seemingly has an even stronger press for achievement and continuing education than these schools. It may well be that the school has a reputation for being college preparatory in nature and that Catholic students of less interest or ability tend to enroll in the public high schools. Certainly the fact that all students of this high school are required to take the New York State Regents Examinations and seek Regents diplomas gives evidence of the college orientation of this high school. Schools 3 and 6 rank lowest on item 182, and probably for quite different reasons. School 3, the technical and industrial school, generally expects to place many of its industrial students in jobs after graduation. It has no trouble in doing so and characteristically has more job vacancy notifications than it can fill. For school 6 the situation is quite different. The student body at school 6 has the lowest average socioeconomic status of all 11 schools and also the highest proportion of Negro students. Their lack of expectation for college attendance is most likely due to the combined effects of financial deprivation, lack of support from family and friends, and lower scholastic aptitude.

Enough illustrative material has been drawn from Table 1 to indicate that there are many differences within this table that are not only statistically significant but also meaningful as well. Much of the latter part of this report will deal with the possible relationship of these differences to student contentment, values, and aspirations for future education or training. No extended comments will be made of the differences observed in Table 2. The first and second order factor scores are difficult to interpret in many cases, despite the fact that they are presumably based on the results of factor analyses of the HSCI instrument. Certain very general observations may be in order, however. It is interesting to note, for example, that school 6, with the student body of lowest socioeconomic status, ranks unexpectedly high (at least in this author's mind) with respect to Academic Climate, Intellectual Climate, and Student Dignity. It is reassuring to know that a school in a lower socioeconomic area, with its special problems and practical difficulties, can have teachers and administrators of such effectiveness that the student body can respond quite positively with respect to these aspects of their academic environment. Another interesting finding from Table 2 is that schools ranking high in emphasis on Academic Achievement are not necessarily the schools where the emphasis is all on work and none on play. For instance, of the three schools ranking highest on Academic Achievement, one (school 11) ranks highest on the Work-Play continuum, while the other two rank second and third lowest on the same continuum. Certainly the two kinds of press do not seem to be mutually exclusive. In the same context it is also interesting to note that the three schools with student bodies ranking highest in socioeconomic status (schools 1, 8, and 10) rank lowest with respect to the Work-Play continuum. Apparently interest in the play aspects of life is no stranger to the high status school.

It will be recalled that the fifth objective of the present research related to the assessment of the validity and utility of the instruments employed. Before leaving Tables 1 and 2 it may be appropriate to raise certain issues concerning validity in the context of the data provided in these tables. One fact that is immediately evident to any objective observer of these data is the high standing of school 11 with respect to any socially desirable characteristic of the school environment. Although all the instruments administered to the 11 schools were administered in exactly the same manner, there are some extraneous factors that are difficult to control. In the case of school 11 the test session proctors were, of course, the teaching nuns and brothers of the school, and it is generally conceded that Catholic students are quite influenced by the presence of the cloth. One wonders whether that presence did not incline these students to paint an especially rosy picture of the school despite the test administrator's usual, pointed, and repeated assurances that responses would be kept confidential. Yet not all responses or scale scores are consistent with this hypothesis, and there are some that are quite consistent with initial expectations one might have about such a school. For example, school 11 ranked highest on the Deference scale and displayed the highest percentage of endorsement for item 9 of that scale, "Teachers go out of their way to make sure that students address them with due respect." (The endorsement pattern was 37%, 39%, 48%, 40%, 51%, 36%, 41%, 40%, 36%, 39%, and 70% for schools 1 through 11 respectively.) But such findings as these are consistent either with a claim for the validity of the HSCI or with the contention that school 11 students might be over-influenced by the presence of ecclesiastical authority figures. At this point there is no definitive way of determining the existence of such effects or their nature and degree if they do exist. It does make clear, however, that the possible influence of authority figures and social desirability factors do need to be considered in connection with future use of instruments of this type at the high school level and that we need much more research on these topics.

Before leaving the data provided in answer to question #1, it may be useful to call attention to certain of the items listed in Table 3 which yield information of interest but which have not yet been commented upon. The results for item 234, for example, reveal that the teachers at the suburban school (school 10) are apparently far less inclined to stress the practical uses of their subject in helping students get a good job, probably feeling that the very great majority of their students will be heading off to college anyway. The results for item 166 suggest that as much and perhaps more smoking and drinking goes on among students of high socioeconomic status as low, but that the influence of religion (or the presence of ecclesiastical authority figures) reduces the incidence, or at least makes it less observable in the school setting. And the results for item 228 reveal that the yelling and disorderliness found in many school halls and cafeterias does not seem to be characteristic of the well-ordered and controlled environment of school 11.

The answer to the first question is now clear. There are indeed significant differences in high school environments as perceived by students and reflected in the various environmental "press" scores of the HSCI. We shall consider the correlates and implications of these differences again and again in various sections of this report. It is time now to turn our attention to the second of the nine questions that structured the conduct of this research.

## Question 2

The second objective of this research, it will be recalled, was to identify and analyze any significant differences that might exist in the need patterns of the 11 student bodies represented in the sample. This objective was represented operationally in the question:

Are there significant differences in the needs of the student bodies in different high schools, as these are measured by the Stern Activities Index?

To obtain evidence relevant to this question statistical procedures identical to those used with the HSCI were used for the SAI. Analysis of variance was used to assess the significance of differences among school means for all 30 scale scores and for all first and second order factor scores. The results of these analyses are shown in Tables 4 and 5 respectively. Related standard deviations are presented in Appendix H and I. As with the HSCI the 30 items of the SAI that had the greatest range of endorsement were identified, and these are shown in Table 6. (Actually, only 26 items are listed, since the inclusion of items with a 25% endorsement range, the next highest number, would have resulted in far more than 30.)

In comparing the data in Tables 4, 5, and 6 with that presented earlier for the HSCI, one fact is immediately apparent: Differences among school environments, as measured by the HSCI, are greater than the differences in the needs of the various student bodies, as measured by the SAI. Although the F ratios for the scores of the SAI are sufficiently high to be significant at the .001 level in 27 out of 30 cases (Table 4), they are not nearly as high as those recorded for the HSCI (Table 1). Furthermore, endorsement ranges for individual items are not nearly as great for the SAI as for the HSCI (Table 6). The answer to question 2 would seem to be that there are indeed significant differences in the needs of the student bodies in different high schools, but that there seems to be some evidence, doubtlessly complicated by scaling issues, that these differences are not as great as those for school environments.

Most of the data in Table 4 are self-explanatory, but some deserves additional comment and emphasis. The student body expressing the strongest need for Harm Avoidance is the student body with the lowest socioeconomic status - that at school 6. It would seem reasonable to interpret this as a reaction to the greater number of threats likely to be encountered in such an environment. A further handicap for this group of students is their greater superstition, as evidence by their low score on the Objectivity Scale. This tendency toward superstition is illustrated by the endorsement percentages of items 81 and 111 in Table 6, where the school 6 student body consistently represents the most extreme end of the superstition continuum. The need for Order is also greatest for this group as evidenced by their first-ranking status on this scale. It is interesting that the group of highest socioeconomic status (school 10) ranks lowest on this need for Order scale, perhaps supporting a chronic complaint of middle class parents! Items 52, 97, 112, 156, 202, 232, and 262 in Table 6 represent the trend. Item 202, for example, yields a rank-difference correlation of -.95 between socioeconomic status and percentage of student body endorsing the item - the higher the socioeconomic status, the less interest in shining shoes or brushing clothes! Similar relationships seem to hold true for the other four items. The need for

### Table 4
### School Means and F Ratios for the 30 Scales of the Stern Activities Index

| Scale | School Means | | | | | | | | | | | F | P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | | |
| 1. Abasement-Assurance | 3.95 | 3.94 | 4.06 | 4.12 | 4.28 | 4.04 | 4.20 | 4.24 | 3.87 | 3.94 | 4.29 | 1.89 | .05 |
| 2. Achievement | 4.84 | 5.10 | 5.87 | 5.13 | 5.22 | 5.20 | 5.40 | 5.53 | 5.24 | 5.41 | 5.67 | 4.18 | .001 |
| 3. Adaptability-Defensiveness | 4.46 | 4.72 | 4.84 | 4.69 | 4.96 | 4.61 | 4.78 | 4.89 | 4.72 | 4.28 | 4.18 | 3.67 | .001 |
| 4. Affiliation-Rejection | 6.80 | 7.02 | 6.81 | 7.11 | 7.14 | 6.90 | 7.32 | 6.88 | 6.82 | 6.52 | 7.54 | 3.98 | .001 |
| 5. Aggression-Blame Avoidance | 5.20 | 4.67 | 4.91 | 4.55 | 4.17 | 4.39 | 4.82 | 4.45 | 4.57 | 5.07 | 4.56 | 3.03 | .001 |
| 6. Change-Sameness | 6.38 | 6.16 | 5.47 | 6.35 | 5.80 | 5.87 | 6.09 | 6.12 | 6.09 | 6.48 | 5.81 | 5.54 | .001 |
| 7. Conjunctivity-Disjunctivity | 4.63 | 5.08 | 5.60 | 5.32 | 5.58 | 6.03 | 4.96 | 5.43 | 4.92 | 4.90 | 5.29 | 5.71 | .001 |
| 8. Counteraction-Inferiority Avoidance | 5.14 | 5.46 | 5.93 | 5.33 | 5.33 | 5.25 | 5.62 | 5.55 | 5.43 | 5.82 | 5.65 | 2.63 | .01 |
| 9. Deference-Restiveness | 5.38 | 5.78 | 6.28 | 5.93 | 6.29 | 6.46 | 5.85 | 6.07 | 5.72 | 5.69 | 6.28 | 4.93 | .001 |
| 10. Dominance-Tolerance | 5.78 | 5.31 | 5.64 | 5.52 | 4.95 | 5.52 | 5.56 | 5.34 | 5.46 | 5.82 | 6.08 | 3.85 | .001 |
| 11. Ego Achievement | 4.53 | 4.60 | 4.16 | 4.69 | 4.40 | 4.91 | 4.74 | 4.69 | 4.71 | 5.17 | 5.23 | 4.24 | .001 |
| 12. Emotionality-Placidity | 4.84 | 4.48 | 3.61 | 4.78 | 4.60 | 4.24 | 4.74 | 4.60 | 4.56 | 5.25 | 4.74 | 9.35 | .001 |
| 13. Energy-Passivity | 6.22 | 5.77 | 6.39 | 6.19 | 6.05 | 5.67 | 6.58 | 6.36 | 6.13 | 6.29 | 6.52 | 6.83 | .001 |
| 14. Exhibitionism-Inferiority Avoidance | 4.12 | 3.60 | 4.05 | 4.29 | 3.79 | 3.86 | 4.41 | 3.71 | 3.65 | 4.11 | 4.19 | 3.51 | .001 |
| 15. Fantasied Achievement | 4.07 | 4.22 | 4.83 | 4.37 | 4.31 | 5.04 | 4.51 | 3.94 | 4.06 | 4.09 | 4.33 | 4.45 | .001 |
| 16. Harm Avoidance-Risktaking | 4.34 | 4.97 | 3.98 | 5.44 | 5.49 | 5.79 | 4.40 | 5.12 | 4.73 | 4.04 | 4.52 | 14.55 | .001 |
| 17. Humanities, Social Science | 3.55 | 4.02 | 3.51 | 4.33 | 3.93 | 4.40 | 3.76 | 4.68 | 4.01 | 4.84 | 4.27 | 5.34 | .001 |
| 18. Impulsiveness-Deliberation | 5.54 | 5.35 | 5.18 | 5.33 | 4.90 | 4.87 | 5.66 | 5.20 | 5.30 | 6.01 | 5.61 | 5.55 | .001 |
| 19. Narcissism | 6.12 | 5.91 | 5.48 | 6.48 | 6.23 | 6.79 | 6.34 | 5.93 | 6.20 | 5.63 | 6.36 | 7.17 | .001 |
| 20. Nurturance-Rejection | 6.13 | 6.19 | 5.73 | 6.68 | 6.93 | 6.12 | 6.41 | 6.76 | 6.19 | 6.51 | 6.98 | 7.05 | .001 |
| 21. Objectivity-Projectivity | 7.87 | 7.98 | 8.37 | 7.87 | 7.42 | 7.06 | 7.99 | 8.09 | 8.19 | 7.75 | 8.56 | 12.27 | .001 |
| 22. Order-Disorder | 4.80 | 5.55 | 5.68 | 5.95 | 6.35 | 6.43 | 5.40 | 5.17 | 5.18 | 4.10 | 5.43 | 11.20 | .001 |
| 23. Play-Work | 6.75 | 6.21 | 6.48 | 6.28 | 6.05 | 6.02 | 6.68 | 6.02 | 6.26 | 6.17 | 6.38 | 2.46 | .01 |
| 24. Practicalness-Impracticalness | 5.52 | 5.57 | 6.51 | 5.68 | 5.93 | 6.19 | 5.67 | 5.76 | 5.47 | 5.12 | 6.18 | 7.32 | .001 |
| 25. Reflectiveness | 6.10 | 6.05 | 5.54 | 6.27 | 5.99 | 6.17 | 6.11 | 6.19 | 6.03 | 6.51 | 6.39 | 3.53 | .001 |
| 26. Science | 3.29 | 3.68 | 4.87 | 3.60 | 3.47 | 4.30 | 3.79 | 3.78 | 3.62 | 3.79 | 4.10 | 4.78 | .001 |
| 27. Sensuality-Puritanism | 5.64 | 5.41 | 4.86 | 5.51 | 5.22 | 5.23 | 5.60 | 5.44 | 5.64 | 5.60 | 5.23 | 4.16 | .001 |
| 28. Sexuality-Prudishness | 5.79 | 5.38 | 5.14 | 6.07 | 6.13 | 6.20 | 6.15 | 5.37 | 5.68 | 5.45 | 5.77 | 4.51 | .001 |
| 29. Supplication-Autonomy | 5.99 | 6.05 | 5.98 | 6.43 | 6.44 | 6.46 | 6.31 | 6.18 | 6.17 | 5.93 | 6.79 | 5.04 | .001 |
| 30. Understanding | 4.70 | 4.96 | 5.01 | 5.05 | 5.07 | 5.13 | 4.93 | 5.68 | 4.79 | 5.55 | 5.40 | 3.41 | .001 |

## Table 5

School Means and F Ratios for the First and Second Order Factor Scores of the Stern Activities Index

| Scale | School Means | | | | | | | | | | | F | p |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | | |
| First Order Factor Scores | | | | | | | | | | | | | |
| 1. Self-Assertion | 18.50 | 17.74 | 18.68 | 18.87 | 17.46 | 19.33 | 19.22 | 17.67 | 17.88 | 19.18 | 19.85 | 3.31 | .001 |
| 2. Audacity-Timidity | 18.23 | 17.60 | 20.63 | 17.08 | 16.46 | 17.94 | 18.72 | 17.05 | 17.52 | 18.90 | 18.48 | 7.35 | .001 |
| 3. Intellectual Interests | 17.64 | 18.72 | 18.93 | 19.25 | 18.46 | 20.00 | 18.60 | 20.33 | 18.46 | 20.69 | 20.16 | 2.97 | .01 |
| 4. Motivation | 20.90 | 21.30 | 23.20 | 21.71 | 21.67 | 21.24 | 22.54 | 23.11 | 21.59 | 23.06 | 23.26 | 4.60 | .001 |
| 5. Applied Interests | 13.61 | 14.80 | 17.07 | 15.23 | 15.75 | 16.92 | 14.85 | 14.71 | 14.28 | 13.00 | 15.71 | 9.54 | .001 |
| 6. Constraint-Expressiveness | 19.72 | 21.18 | 22.02 | 19.53 | 20.58 | 20.82 | 19.04 | 21.12 | 20.81 | 19.19 | 19.69 | 5.95 | .001 |
| 7. Diffidence-Egoism | 17.68 | 17.85 | 18.06 | 17.02 | 16.37 | 15.24 | 17.14 | 18.22 | 17.93 | 18.04 | 17.87 | 7.67 | .001 |
| 8. Orderliness | 17.51 | 19.11 | 20.63 | 19.60 | 21.24 | 21.72 | 18.60 | 19.28 | 18.71 | 16.51 | 19.28 | 10.31 | .001 |
| 9. Submissiveness | 19.92 | 20.63 | 20.91 | 21.41 | 22.46 | 21.23 | 21.23 | 21.95 | 20.49 | 20.41 | 21.74 | 3.40 | .001 |
| 10. Timidity-Audacity | 21.77 | 22.40 | 19.37 | 22.92 | 23.54 | 22.06 | 21.28 | 22.95 | 22.48 | 21.10 | 21.52 | 7.35 | .001 |
| 11. Closeness | 23.29 | 23.39 | 23.13 | 25.11 | 25.79 | 25.24 | 24.71 | 24.37 | 23.76 | 23.57 | 25.81 | 6.78 | .001 |
| 12. Sensuousness | 17.54 | 16.70 | 15.48 | 18.06 | 17.58 | 18.22 | 18.09 | 16.74 | 17.52 | 16.68 | 17.36 | 6.16 | .001 |
| 13. Friendliness | 13.55 | 13.23 | 13.30 | 13.39 | 13.19 | 12.92 | 14.00 | 12.89 | 13.08 | 12.69 | 13.93 | 3.06 | .001 |
| 14. Expressiveness-Constraint | 20.28 | 18.82 | 17.98 | 20.47 | 19.42 | 19.18 | 20.96 | 18.88 | 19.19 | 20.82 | 20.31 | 5.95 | .001 |
| 15. Egoism-Diffidence | 12.32 | 12.15 | 11.94 | 12.98 | 13.13 | 14.76 | 12.86 | 11.78 | 12.07 | 11.97 | 12.13 | 7.67 | .001 |
| Second Order Factor Scores | | | | | | | | | | | | | |
| 16. Intellectual Orientation | 88.88 | 90.16 | 98.51 | 92.14 | 89.30 | 95.43 | 93.92 | 92.88 | 89.72 | 94.82 | 97.47 | 3.82 | .001 |
| 17. Dependency Needs | 133.50 | 139.37 | 141.19 | 140.82 | 146.22 | 143.23 | 136.86 | 142.61 | 138.45 | 131.80 | 141.62 | 6.53 | .001 |
| 18. Emotional Expression | 105.49 | 102.02 | 100.51 | 108.87 | 106.56 | 109.65 | 109.84 | 102.33 | 103.49 | 104.90 | 109.39 | 5.71 | .001 |
| 19. Educability | 89.58 | 94.56 | 100.75 | 97.21 | 99.58 | 101.11 | 95.82 | 99.39 | 93.52 | 93.66 | 100.16 | 4.86 | .001 |
| Interpretive Data | | | | | | | | | | | | | |
| 20. Socioeconomic Status | 3.56 | 4.13 | 4.75 | 4.83 | 4.30 | 5.27 | 4.22 | 3.52 | 4.41 | 2.10 | 3.94 | | |
| 21. DAT (VR + NA) | 47.56 | 43.77 | 40.57 | 44.54 | 41.72 | 34.25 | 43.86 | 48.32 | 40.27 | 52.81 | 48.85 | | |

## Table 6

### SAI Items Having the Greatest Range of Endorsement*

| Item | Range of Endorsement | Scale | School Endorsement 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 22. Washing and polishing things like a car, silverware, or furniture. | 26 | 22 | 57 | 65 | 71 | 58 | 65 | 59 | 60 | 51 | 49 | 45 | 62 |
| 46. Being careful to wear a raincoat and rubbers when it rains. | 28 | 16 | 22 | 30 | 31 | 39 | 43 | 59 | 34 | 44 | 35 | 16 | 29 |
| 52. Keeping my bureau drawers, desks, etc. in perfect order. | 30 | 22 | 53 | 62 | 66 | 67 | 72 | 76 | 59 | 65 | 58 | 46 | 63 |
| 54. Learning how to repair such things as the radio, sewing machine, or car. | 42 | 24 | 57 | 55 | 93 | 55 | 55 | 65 | 60 | 58 | 51 | 52 | 60 |
| 78. Being in a situation that requires quick decisions and action. | 31 | 18 | 47 | 52 | 71 | 52 | 43 | 40 | 59 | 52 | 47 | 57 | 54 |
| 80. Helping to collect money for poor people. | 30 | 20 | 65 | 63 | 54 | 68 | 74 | 70 | 64 | 70 | 70 | 70 | 84 |
| 81. Paying no attention to omens, signs, and other forms of superstition. | 26 | 21 | 69 | 63 | 71 | 64 | 63 | 50 | 68 | 74 | 72 | 65 | 76 |
| 86. Reading articles which tell about new scientific developments, discoveries, or inventions. | 31 | 26 | 51 | 56 | 82 | 56 | 63 | 64 | 59 | 56 | 54 | 52 | 65 |
| 97. Going to a party where all the activities are planned. | 36 | 7 | 45 | 51 | 66 | 55 | 58 | 69 | 43 | 46 | 46 | 33 | 50 |
| 111. Avoiding things that might bring bad luck. | 26 | 21 | 38 | 35 | 26 | 40 | 44 | 52 | 38 | 41 | 31 | 34 | 30 |
| 112. Arranging my clothes neatly before going to bed. | 32 | 22 | 57 | 57 | 57 | 65 | 74 | 70 | 60 | 56 | 58 | 42 | 52 |
| 116. Doing experiments in physics, chemistry, or biology in order to test a theory. | 26 | 26 | 33 | 40 | 59 | 40 | 37 | 48 | 40 | 44 | 45 | 46 | 44 |
| 135. Thinking about winning recognition and acclaim as a brilliant military figure. | 31 | 15 | 23 | 33 | 55 | 32 | 32 | 39 | 37 | 27 | 30 | 26 | 27 |

Table 6 (continued)

| Item | Range of Endorsement | Scale | School Endorsement | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 144. Working with mechanical appliances, household equipment tools, electrical apparatus, etc. | 46 | 24 | 54 | 49 | 90 | 50 | 51 | 57 | 48 | 52 | 47 | 44 | 58 |
| 156. Leading a well-ordered life with regular hours and an established routine. | 31 | 6 | 28 | 32 | 41 | 40 | 44 | 55 | 25 | 31 | 31 | 24 | 38 |
| 162. Letting loose and having a good cry sometimes. | 36 | 12 | 62 | 56 | 28 | 63 | 64 | 56 | 55 | 60 | 60 | 63 | 62 |
| 196. Playing rough games in which someone might get hurt. | 37 | 16 | 42 | 31 | 59 | 28 | 34 | 35 | 41 | 22 | 36 | 40 | 37 |
| 202. Shining my shoes and brushing my clothes every day. | 37 | 22 | 38 | 50 | 53 | 56 | 58 | 59 | 49 | 37 | 46 | 22 | 42 |
| 204. Fixing light sockets, making curtains, painting things, etc. around the house. | 31 | 24 | 53 | 47 | 72 | 49 | 50 | 47 | 54 | 57 | 49 | 41 | 54 |
| 205. Reading stories that try to show what people really think and feel inside themselves. | 26 | 25 | 76 | 75 | 56 | 81 | 77 | 80 | 75 | 79 | 77 | 82 | 79 |
| 232. Keeping my room in perfect order. | 29 | 22 | 52 | 65 | 64 | 67 | 73 | 70 | 64 | 58 | 55 | 41 | 62 |
| 237. Eating so much I can't take another bite. | 51 | 27 | 31 | 32 | 70 | 32 | 26 | 27 | 32 | 31 | 30 | 42 | 19 |
| 262. Having a special place for everything and seeing that each thing is in its place. | 36 | 22 | 47 | 58 | 63 | 62 | 66 | 77 | 56 | 51 | 54 | 41 | 63 |
| 281. Converting or changing the view of others. | 27 | 11 | 47 | 45 | 43 | 45 | 40 | 44 | 47 | 41 | 50 | 67 | 57 |
| 293. Limiting my pleasures so that I can spend all my time usefully. | 28 | 23 | 30 | 39 | 43 | 40 | 51 | 58 | 33 | 41 | 42 | 30 | 45 |
| 298. Reading about love affairs of movie stars and other famous people. | 26 | 28 | 43 | 43 | 37 | 50 | 54 | 60 | 51 | 34 | 42 | 41 | 44 |

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*Note.-All figures under "Range of Endorsement" and "School Endorsement" are percentages. "Range of Endorsement" is found by subtracting the lowest school percentage figures from the highest. The numbers listed under "Scale" are the same numbers associated with scale titles in Table 4.

order may be quite important for a lower class adolescent in a disordered world, but may mean little to a middle class adolescent whose sense of order is provided by the good offices of adults who give it freely and free of obligation.

Other data in Table 4 are also worthy of note. It is interesting that it is the students in the suburban school (school 10) that rank highest in Emotionality and lowest in Practicalness. Illustrative items for the latter in Table 6 are items 54, 144, and 204. Apparently it takes some time to develop the middle class handy man. It is striking also that it is the student body at school 6, the group with the lowest socioeconomic status, that has the highest need for Fantasied Achievement. Reassuringly consistent with expectations is the fact that the technical and industrial school boys (school 3) rank highest on Practicalness and lowest on Reflectiveness. Their relatively low endorsement of item 205 is illustrative of their emphasis on a "thing" orientation rather than a "people" orientation. But by the same token it is surprising that the students of school 1, of relatively high socioeconomic status, do not have the same interest in or need for interaction with the Humanities and Social Sciences as do other student groups of relatively high socioeconomic status. In terms of their interest in this area they share the bottom rung of the ladder with the boys from the technical and industrial school.

The first and second order factor scores of the SAI, like those of the HSCI, are sometimes difficult to interpret. Table 5 shows the student body means and F ratios for all these factor scores, and Appendix J duplicates the definitions of these scores as they appear in the manual (25). The factor score "Motivation" appears highest for schools 3, 8, 10, and 11. A high ranking on this factor score is not particularly surprising for relatively high status schools like 8 and 10, especially since this score category is supposed to involve elements of "competitiveness," according to the definition given in the manual. But it is a little surprising that boys from the technical and industrial school (school 3) rank so high. These are the same boys that rank highest on the Achievement scale (Table 4), which is one of the scales contributing to the Motivation factor score. Inspection of the original item endorsement data shows that there were several items in the Achievement scale that the school 3 boys were more inclined to show a "liking" for than those in any other group: items relating to competing with others for a prize or goal, and items relating to picking out difficult tasks and working hard to do them. The most reasonable interpretation of these results is that these boys, although perhaps not motivated or interested particularly in academic things per se (e.g., humanities, social science), nevertheless show much interest and motivation for mechanical and technical tasks of the type they do at school, and what we are seeing here are the results of a rather favorable congruence between student needs and the experiences the school is offering them. Indeed, what the author knows subjectively from observing the situation at school 3 would confirm such an interpretation. But it does not make scores like "Motivation" any easier to interpret.

Further examination of the means for these factor scores continues to reveal a mixture of both insight and confusion. It is interesting to note (and understandable) that the students of lowest socioeconomic status (school 6) have the highest Egoism scores, meaning the strongest preoccupation with self. But it is difficult to understand why they should also rank highest on "Educability." It becomes somewhat easier to understand when reference to the score category definitions in Appendix J reveals that Submissiveness and Orderliness contribute to the variance of Educability. But again it does not make score categories of this type any easier to interpret. The finding that students from school 3 rank highest on Intellectual Orientation provokes similar initial perplexity. Examination of Appendix J again suggests a possible interpretation in terms of contributing scores. Of the five scores contributing to the Intellectual Orientation category, a group like the school 3 students could well rank high on Audacity, Applied Interests, and Motivation (see above), neither high nor low on Intellectual Interests and Self-Assertion, and still come out high on Intellectual Orientation as a whole. This is precisely what happened to the students from school 3. But because most people would generally weight intellectual interests most highly in any conceptualization of "Intellectual Orientation," the results are initially confusing. In many cases it seems advisable to restrict oneself to the interpretation of the 30 original scale scores.

The evidence presented relevant to question 2 suggests that there are indeed significant differences in the needs of student bodies as measured by the SAI, that these differences are apparently not as great as the differences among school environments, but that there are nevertheless certain of these differences that yield interpretable and meaningful data that have implications for student behavior. We turn our attention now to question 3.

## Question 3

It will be recalled that the third objective of the research related to intra-school "congruence" between student needs and environmental press. This objective was represented operationally in the question:

Are there distinctive differences between high schools with respect to the relative congruence of student needs with the "press" characteristics of the high school environment which would facilitate (or impede) the satisfaction of those needs?

This question brings up the issue of whether there are differences in the extent to which high school environments provide experiences and climate that are appropriate to the satisfaction of the characteristic needs that the students bring with them to the school. It is a question of the "fitting in" or congruence of the environmental characteristics with the specific need pattern of the student body. It is only because the Stern Activities Index and the High School Characteristics Index have the parallel scores feature, based on H. A. Murray's need-press interactions or themas (13) that we can ask questions of this nature.

To provide evidence relevant to this hypothesis of possible differences in need-press congruence, standard scores were computed for the total sample of subjects, without regard for school, for each of the 30 HSCI scale scores. To avoid negative scores a standard score with a mean of ten and a standard deviation of one was selected. Within-school standard score means were then computed for each scale score. The resulting standard score means represented the status of the school with respect to the sample as a whole. Exactly the same procedure was followed for the 30 scale scores of the SAI. This permitted direct comparison of a school's standing with respect to a given HSCI scale score with its standing on the parallel SAI scale score, e.g., a student body's need for Achievement standard score mean could be compared meaningfully with the school's press for Achievement standard score mean. To show any differences in relative standing within the total group with respect to any given pair of parallel HSCI-SAI scores, the SAI standard score mean was subtracted from the parallel HSCI standard score mean in every case.

Table 7 shows the HSCI standard score means, the SAI standard score means, and difference scores for all scales and all schools. In interpreting the difference scores, it is important to remember previous evidence that the differences in school means for the HSCI

Table 7

Standard Score Means and HSCI-SAI Differences Scores

| Scale | | School | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 1. Abasement-Assurance | HSCI | 10.20 | 10.38 | 9.75 | 10.05 | 9.93 | 9.55 | 10.30 | 9.88 | 10.26 | 9.79 | 9.77 |
| | SAI | 9.91 | 9.90 | 9.98 | 10.01 | 10.11 | 9.97 | 10.06 | 10.08 | 9.86 | 9.91 | 10.11 |
| | Diff. | .29 | .48 | -.23 | .04 | -.18 | -.42 | .24 | -.20 | .40 | -.12 | -.34 |
| 2. Achievement | HSCI | 9.78 | 9.71 | 9.65 | 9.83 | 9.76 | 9.77 | 9.92 | 10.33 | 9.61 | 10.49 | 10.73 |
| | SAI | 9.78 | 9.89 | 10.23 | 9.90 | 9.94 | 9.93 | 10.02 | 10.08 | 9.95 | 10.02 | 10.14 |
| | Diff. | .00 | -.18 | -.58 | -.07 | -.18 | -.16 | -.10 | .25 | -.34 | .47 | .59 |
| 3. Adaptability | HSCI | 10.04 | 10.00 | 9.67 | 9.60 | 9.98 | 9.74 | 10.23 | 9.87 | 10.08 | 10.05 | 10.60 |
| | SAI | 9.92 | 10.04 | 10.10 | 10.03 | 10.15 | 9.99 | 10.07 | 10.12 | 10.04 | 9.83 | 9.79 |
| | Diff. | .12 | -.04 | -.43 | -.43 | -.17 | -.25 | .16 | -.25 | .04 | .22 | .81 |
| 4. Affiliation-Rejection | HSCI | 9.91 | 9.52 | 9.75 | 9.73 | 9.71 | 9.71 | 9.94 | 10.44 | 9.63 | 10.37 | 10.88 |
| | SAI | 9.90 | 10.00 | 9.91 | 10.04 | 10.05 | 9.95 | 10.13 | 9.94 | 9.91 | 9.78 | 10.22 |
| | Diff. | .01 | -.48 | -.16 | -.31 | -.34 | -.24 | -.19 | .50 | -.28 | .59 | .66 |
| 5. Aggression-Blame Avoidance | HSCI | 9.89 | 10.43 | 9.98 | 10.17 | 10.22 | 10.57 | 9.97 | 9.91 | 10.56 | 9.96 | 8.98 |
| | SAI | 10.22 | 10.00 | 10.10 | 9.95 | 9.80 | 9.89 | 10.06 | 9.91 | 9.96 | 10.16 | 9.96 |
| | Diff. | -.33 | .43 | -.12 | .22 | .42 | .68 | -.09 | .00 | .60 | -.20 | -.98 |
| 6. Change-Sameness | HSCI | 9.52 | 9.99 | 9.69 | 9.93 | 9.78 | 10.41 | 9.74 | 10.01 | 9.69 | 9.80 | 10.80 |
| | SAI | 10.16 | 10.05 | 9.71 | 10.14 | 9.87 | 9.91 | 10.02 | 10.03 | 10.02 | 10.21 | 9.88 |
| | Diff. | -.64 | -.06 | -.02 | -.21 | -.09 | .50 | -.28 | -.02 | -.33 | -.41 | .92 |
| 7. Conjunctivity-Disjunctivity | HSCI | 9.82 | 9.59 | 10.00 | 10.03 | 10.00 | 10.07 | 9.83 | 10.24 | 9.71 | 10.16 | 10.41 |
| | SAI | 9.74 | 9.93 | 10.15 | 10.03 | 10.14 | 10.33 | 9.88 | 10.08 | 9.86 | 9.85 | 10.02 |
| | Diff. | .08 | -.34 | -.15 | .00 | -.14 | -.26 | -.05 | .16 | -.15 | .31 | .39 |
| 8. Counteraction-Inferiority Avoidance | HSCI | 9.92 | 9.65 | 10.06 | 9.88 | 10.15 | 10.11 | 10.18 | 10.06 | 9.90 | 10.30 | 10.11 |
| | SAI | 9.83 | 9.98 | 10.18 | 9.92 | 9.92 | 9.88 | 10.05 | 10.02 | 9.96 | 10.13 | 10.06 |
| | Diff. | .09 | -.33 | -.12 | -.04 | .23 | .23 | .13 | .04 | -.06 | .17 | .05 |

Table 7 (continued)

| Scale | | School | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1. | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 9. Deference-Restiveness | HSCI | 9.86 | 9.87 | 9.75 | 10.08 | 10.22 | 10.08 | 9.84 | 9.97 | 10.00 | 9.60 | 10.45 |
| | SAI | 9.72 | 9.91 | 10.14 | 9.98 | 10.14 | 10.22 | 9.94 | 10.04 | 9.88 | 9.86 | 10.14 |
| | Diff. | .14 | -.04 | -.39 | .10 | .08 | -.14 | -.10 | -.07 | .12 | -.26 | .31 |
| 10. Dominance-Tolerance | HSCI | 10.28 | 10.05 | 9.52 | 9.87 | 10.27 | 9.98 | 10.34 | 10.21 | 10.33 | 9.94 | 9.69 |
| | SAI | 10.09 | 9.90 | 10.03 | 9.98 | 9.75 | 9.98 | 10.00 | 9.91 | 9.96 | 10.11 | 10.21 |
| | Diff. | .19 | .15 | -51 | -.11 | .52 | .00 | .34 | .30 | .37 | -.17 | -.52 |
| 11. Ego Achievement | HSCI | 9.95 | 9.72 | 10.04 | 9.97 | 9.84 | 10.19 | 10.16 | 10.21 | 9.57 | 10.03 | 10.25 |
| | SAI | 9.92 | 9.95 | 9.77 | 9.98 | 9,87 | 10.07 | 10.00 | 9.98 | 9.99 | 10.17 | 10.20 |
| | Diff. | .03 | -.23 | .27 | -.01 | -.03 | .12 | .16 | .23 | -.42 | -.14 | .05 |
| 12. Emotionality-Placidity | HSCI | 9.98 | 9.80 | 9.94 | 9.99 | 10.01 | 9.92 | 9.93 | 9.98 | 9.53 | 9.81 | 10.64 |
| | SAI | 10.12 | 9.95 | 9.53 | 10.09 | 10.01 | 9.84 | 10.08 | 10.01 | 9.99 | 10.32 | 10.07 |
| | Diff. | -.14 | -.15 | .41 | -.10 | .00 | .08 | -.15 | -.03 | -.46 | -.51 | .57 |
| 13. Energy-Passivity | HSCI | 9.77 | 9.55 | 10.19 | 9.87 | 9.99 | 10.00 | 9.86 | 10.13 | 9.37 | 10.08 | 10.80 |
| | SAI | 10.00 | 9.74 | 10.10 | 9.99 | 9.90 | 9.68 | 10.21 | 10.08 | 9.95 | 10.04 | 10.17 |
| | Diff. | -.23 | -.19 | .09 | -.12 | .09 | .32 | -.35 | .05 | -.58 | .04 | .63 |
| 14. Exhibitionism-Inferiority Avoidance | HSCI | 9.74 | 9.53 | 9.73 | 9.94 | 9.81 | 10.00 | 10.00 | 10.24 | 9.58 | 10.45 | 10.69 |
| | SAI | 10.05 | 9.83 | 10.02 | 10.12 | 9.91 | 9.94 | 10.18 | 9.88 | 9.85 | 10.05 | 10.08 |
| | Diff. | -.31 | -.30 | -.29 | -.18 | -.10 | .06 | -.18 | .36 | -.27 | .40 | .61 |
| 15. Fantasied Achievement | HSCI | 9.95 | 10.04 | 10.12 | 10.04 | 9.78 | 10.13 | 10.05 | 10.08 | 9.93 | 10.19 | 9.77 |
| | SAI | 9.89 | 9.95 | 10.22 | 10.02 | 9.99 | 10.31 | 10.08 | 9.83 | 9.88 | 9.90 | 10.00 |
| | Diff. | .06 | .09 | -.10 | .02 | -.21 | -.18 | -.03 | .25 | .05 | .29 | -.23 |
| 16. Harm Avoidance-Risktaking | HSCI | 9.70 | 9.80 | 10.01 | 10.19 | 10.19 | 10.04 | 9.96 | 9.98 | 9.86 | 9.80 | 10.23 |
| | SAI | 9.81 | 10.07 | 9.66 | 10.26 | 10.28 | 10.41 | 9.83 | 10.13 | 9.97 | 9.68 | 9.88 |
| | Diff. | -.11 | -.27 | .35 | -.07 | -.09 | -.37 | .13 | -.15 | -.11 | .12 | .35 |

Table 7 (continued)

| Scale | | School | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 17. Humanities-Social Science | HSCI | 9.72 | 9.78 | 9.54 | 9.98 | 9.74 | 10.39 | 10.04 | 10.31 | 9.76 | 10.30 | 10.33 |
| | SAI | 9.79 | 9.96 | 9.78 | 10.07 | 9.93 | 10.09 | 9.87 | 10.19 | 9.95 | 10.25 | 10.05 |
| | Diff. | -.07 | -.18 | -.24 | -.09 | -.19 | .30 | .17 | .12 | -.19 | .05 | .28 |
| 18. Impulsiveness-Deliberation | HSCI | 10.07 | 10.21 | 10.03 | 10.00 | 9.97 | 10.09 | 10.03 | 10.06 | 10.12 | 10.30 | 9.46 |
| | SAI | 10.08 | 9.99 | 9.90 | 9.98 | 9.76 | 9.75 | 10.14 | 9.91 | 9.96 | 10.31 | 10.11 |
| | Diff. | -.01 | .22 | .13 | .02 | .21 | .34 | -.11 | .15 | .16 | -.01 | -.65 |
| 19. Narcissism | HSCI | 10.17 | 9.74 | 9.48 | 9.95 | 10.13 | 9.59 | 10.06 | 10.11 | 9.53 | 10.22 | 10.68 |
| | SAI | 9.99 | 9.90 | 9.70 | 10.16 | 10.04 | 10.30 | 10.09 | 9.91 | 10.03 | 9.77 | 10.11 |
| | Diff. | .18 | -.16 | -.22 | -.21 | .09 | -.71 | -.03 | .20 | -.50 | .45 | .57 |
| 20. Nurturance-Rejection | HSCI | 9.95 | 9.50 | 9.83 | 10.20 | 9.85 | 9.88 | 9.83 | 10.02 | 9.59 | 9.72 | 10.95 |
| | SAI | 9.86 | 9.89 | 9.70 | 10.09 | 10.20 | 9.86 | 9.98 | 10.13 | 9.89 | 10.02 | 10.22 |
| | Diff. | .09 | -.39 | .13 | .11 | -.35 | .02 | -.15 | -.11 | -.30 | -.30 | .73 |
| 21. Objectivity-Projectivity | HSCI | 9.82 | 9.57 | 10.18 | 9.97 | 10.00 | 10.32 | 9.79 | 10.12 | 9.81 | 10.13 | 10.34 |
| | SAI | 9.93 | 9.99 | 10.20 | 9.93 | 9.68 | 9.48 | 9.99 | 10.05 | 10.11 | 9.86 | 10.31 |
| | Diff. | -.11 | -.42 | -.02 | .04 | .32 | .84 | -.20 | .07 | -.30 | .27 | .03 |
| 22. Order-Disorder | HSCI | 9.87 | 9.94 | 9.92 | 9.89 | 10.04 | 9.66 | 9.85 | 9.96 | 9.52 | 9.79 | 10.83 |
| | SAI | 9.77 | 10.03 | 10.08 | 10.17 | 10.31 | 10.34 | 9.98 | 9.90 | 9.90 | 9.52 | 9.99 |
| | Diff. | .10 | -.09 | -.16 | -.28 | -.27 | -.68 | -.13 | .06 | -.38 | .27 | .84 |
| 23. Play-Work | HSCI | 10.33 | 9.60 | 9.86 | 9.72 | 9.80 | 9.81 | 9.92 | 10.40 | 9.71 | 10.38 | 10.48 |
| | SAI | 10.19 | 9.96 | 10.08 | 9.99 | 9.89 | 9.88 | 10.16 | 9.88 | 9.98 | 9.94 | 10.03 |
| | Diff. | .14 | -.36 | -.22 | -.27 | -.09 | -.07 | -.24 | .52 | -.27 | .44 | .45 |
| 24. Practicalness-Impracticalness | HSCI | 9.92 | 9.89 | 10.36 | 10.03 | 10.15 | 10.11 | 9.99 | 9.98 | 9.76 | 9.81 | 10.02 |
| | SAI | 9.88 | 9.90 | 10.31 | 9.95 | 10.06 | 10.17 | 9.94 | 9.98 | 9.86 | 9.70 | 10.17 |
| | Diff. | .04 | -.01 | .05 | .08 | .09 | -.06 | .05 | .00 | -.10 | .11 | -.15 |

Table 7 (continued)

| Scale | | School | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 25. Reflectiveness | HSCI | 9.96 | 9.75 | 9.62 | 10.15 | 9.97 | 10.19 | 9.93 | 10.24 | 9.77 | 10.02 | 10.28 |
| | SAI | 9.98 | 9.96 | 9.72 | 10.06 | 9.93 | 10.02 | 9.99 | 10.03 | 9.95 | 10.17 | 10.12 |
| | Diff. | -.02 | -.21 | -.10 | .09 | .04 | .17 | -.06 | .21 | -.18 | -.15 | .16 |
| 26. Science | HSCI | 9.72 | 9.80 | 10.15 | 10.02 | 9.85 | 10.15 | 9.82 | 10.19 | 9.66 | 10.12 | 10.26 |
| | SAI | 9.82 | 9.94 | 10.32 | 9.91 | 9.87 | 10.14 | 9.98 | 9.97 | 9.92 | 9.98 | 10.08 |
| | Diff. | -.10 | -.14 | -.17 | .11 | -.02 | .01 | -.16 | .22 | -.26 | .14 | .18 |
| 27. Sensuality-Puritanism | HSCI | 10.55 | 9.63 | 9.84 | 9.95 | 9.86 | 10.06 | 9.60 | 10.14 | 9.68 | 9.95 | 10.57 |
| | SAI | 10.14 | 10.01 | 9.71 | 10.07 | 9.91 | 9.91 | 10.12 | 10.03 | 10.14 | 10.11 | 9.92 |
| | Diff. | .41 | -.38 | .13 | -.12 | -.05 | .15 | -.52 | .11 | -.46 | -.16 | .65 |
| 28. Sexuality-Prudishness | HSCI | 10.33 | 10.30 | 8.69 | 10.35 | 10.20 | 10.40 | 10.23 | 10.36 | 10.15 | 9.95 | 9.40 |
| | SAI | 10.03 | 9.88 | 9.79 | 10.14 | 10.16 | 10.18 | 10.16 | 9.88 | 9.99 | 9.91 | 10.02 |
| | Diff. | .30 | .42 | -1.10 | .21 | .04 | .22 | .07 | .48 | .16 | .04 | .38 |
| 29. Supplication-Autonomy | HSCI | 9.74 | 9.55 | 10.14 | 9.83 | 10.08 | 10.15 | 9.87 | 10.11 | 9.63 | 10.04 | 10.68 |
| | SAI | 9.86 | 9.89 | 9.85 | 10.08 | 10.08 | 10.09 | 10.02 | 9.95 | 9.95 | 9.83 | 10.26 |
| | Diff. | -.12 | -.34 | .29 | -.25 | .00 | .06 | -.15 | .16 | -.32 | .21 | .42 |
| 30. Understanding | HSCI | 9.85 | 9.74 | 10.00 | 9.90 | 9.94 | 10.14 | 9.99 | 10.29 | 9.60 | 9.83 | 10.45 |
| | SAI | 9.83 | 9.93 | 9.95 | 9.97 | 9.97 | 10.00 | 9.92 | 10.21 | 9.87 | 10.16 | 10.10 |
| | Diff. | .02 | -.19 | .05 | -.07 | -.03 | .14 | .07 | .08 | -.27 | -.33 | .35 |

were appreciably greater than the differences in student body means on the SAI. A similar finding has been reported at the college level (22, p. 718). This means in effect that the rankings of difference scores may tend to be quite similar to the rankings of HSCI scores, and that the conclusions generated from both sets of data might tend to be quite duplicative. Indeed, correlations computed between the difference scores and the HSCI scores yielded 14 correlations in the .90's, 6 in the .80's, 7 in the .70's, and a .57, a .27, and an .18. Correlations with the SAI were predictably and considerably lower.

An additional interpretive problem is the fact that some of the HSCI-SAI dimensions seem to lend themselves to a need-press interpretation and others do not. A need for achievement and a press for achievement, for example, may be quite profitably considered in relation to one another as Murray intended. But consider the problems that arise with a category like need for aggression. That there seems to be such a need in some people cannot be denied. But several problems arise when one considers the "press" for aggression. With what particular kind of press for aggression should need for aggression be considered? If we want the press for aggression to be facilitative of need fulfillment in a socially acceptable way, then the press would presumably involve participation in sports, spectator activities, etc. These are not the kinds of items included in the HSCI Aggression scale, however, which we noted earlier included many items related to student-originated aggression. If this is to be the press for aggression, then, are we altogether certain that an aggressive and retaliative environment constitutes the best press for a need for aggression? Maybe a submissive environment would be more facilitative of tension release and need fulfillment. And what constitutes an appropriate press for a need for "Fantasied Achievement" - and in what sense will it be "appropriate"? Each of these need-press relationships, it seems, has to be considered on an ad hoc basis and with full understanding of how both are defined operationally in the two instruments.

With these limitations in mind, however, there are still some interesting findings and relationships in Table 7 that deserve comment. Comments will be reserved to those difference scores that have appreciable correlations with both HSCI and SAI scores and are hence not repititious of what has already been reported for HSCI scores alone. Let us consider first two intellectual values that many would regard as important outcomes of the educational process: Reflectiveness and Understanding. From Table 7 it can be observed that the environmental press toward Reflectiveness is somewhat greater than student need and interest for schools 8 and 11, but at school 10, the suburban school, student need and interest in Reflectiveness is somewhat greater than environmental support for it. Since Reflectiveness includes items concerned with personal values, philosophy of life, interest in art and music, etc., it would not seem unreasonable to expect school 10 to be somewhat more supportive of this need for Reflectiveness than it is. Instead, its emphasis appears to be more on the surface and superficial aspects of Achievement _per se_, which is a press more concerned with grade competition, college attendance, awards and special honors, etc. On the other hand school 6, of lowest socioeconomic status, provides environmental emphasis on Reflectiveness somewhat greater than student need or interest in it. The same statements can be made with respect to the press for Understanding. Here school 10 is seen to be even further behind student need in providing proper supportive press, and school 6 again ahead of it. School 1, of relatively high socioeconomic status, seems mediocre in both respects: student need for or interest in Reflectiveness and Understanding are not great, and neither is school support for them. The situation for the press for the Humanities is similar, except that school 10 seems a little more promising here, and school 6 appears to press its students even more.

The need-press interactions of Objectivity and Order are also of interest. We have noted earlier the tendency of the school 6 student body toward superstition and suspicion; fortunately, this same student body perceives the school environment as being quite objective and fair in its treatment of them. The result is a difference between the two standard scores that almost spans one standard deviation. On the other hand, students from school 6 have a strong need for Order, as indicated earlier, and yet perceive their school environment as one which offers little support or facilitation of need satisfaction in this area. As a matter of fact, they rank highest in the one and lowest in the other. Since this is the student body of lowest socioeconomic status, the critical role that the school could play here in providing a semblance of structure and order in the midst of the confusion and disorder associated with financial and cultural impoverishment assumes great importance. But since one major source of the disorder is probably certain groups of students, the task is not an easy one.

The status of schools 2 and 9 in Table 7 provide interesting food for thought. There is a rather pronounced tendency for these schools to reveal negative difference scores when the associated HSCI scale is positive or desirable and positive difference scores when they are negative or undesirable. Since the school HSCI means vary more than the student body SAI means, this effect is directly attributable to the tendency for the students in these schools to describe their environment in negative terms. The effect is so general that one begins to suspect the existence of a negative halo effect. One might hypothesize that when school spirit and morale are generally low, it results in an inability to discriminate between various aspects of the school environment and a consequent generalized tendency to rate all aspects in negative terms. The effect here may be the same effect that was noted earlier for school 11, but now reversed. Thus when feeling about a school is strong, scale independence may decrease rapidly, and all scale scores may then become general indices of school morale and spirit. Such hypotheses as these should be tested in future work with the scales.

The evidence that has been presented relevant to question 3 suggests that there are indeed distinctive differences between high schools with respect to the relative congruence of student needs and environmental press, that these differences in congruence are characteristically more related to environmental press differences than student need differences because of the much greater variability of the former, that some need-press categories are somewhat difficult to interpret relationally, but that there are still some differences in congruence which are interpretable and which lead to meaningful and useful insights. We turn our attention now to question 4.

## Question 4

Perhaps one of the most important and intriguing environmental press variables to be incorporated within the HSCI is the "Intellectual Climate" variable. Actually, there are two scores so labeled in the HSCI, both of which are defined in Appendix E. The first is a first order factor score to which the scales of Reflectiveness, Humanities-Social Sciences, Sensuality, Understanding, and Fantasied Achievement contribute. The second is a second order factor score composed of the first order factor scores of Work-Play, Non-Vocational Climate, Aspiration Level, Intellectual Climate, Student Dignity, Academic Climate, Academic Achievement, and Self-Expression. Because the establishment of a favorable intellectual climate ought to be one of the foremost objectives of any high school, this variable was given additional focus and attention in this research by making it the subject of a specialized question of its own. This question, related to objectives 1, 2, and 3 of the present research, was stated in the following manner:

> Are there differences in the "intellectual climates" of different high schools (as measured by the corresponding second order factor score on the HSCI), in the intellectual needs of the different student bodies (as measured by the second order "intellectual orientation" factor scores of the SAI), and in the relative degree of congruence between student intellectual needs and the intellectual climate for satisfying these needs?

Because there existed a first order HSCI Intellectual Climate score and a first order SAI Intellectual Interest score (Appendix J) that appeared as interesting as the second order HSCI Intellectual Climate and SAI Intellectual Orientation scores and perhaps less complex to interpret, these were included in the analysis as well. These scores were translated into standard scores in exactly the same manner as described for the previous question and are presented in the same manner as the data in Table 7. The relevant data for the present question appear in Table 8.

We know from previous analyses that there are significant differences among schools with respect to Intellectual Climate, Intellectual Interests, and Intellectual Orientation scores, and Table 8 shows that these differences make for quite different need-press interactions in the separate school settings. For example, consider the need-press interactions for schools 8, 10, and 11. For schools 8 and 11 environmental press toward intellectuality apparently exceed intellectual interest in the student body (using, as usual, all groups in the sample as a standard of comparison). School 10, ranking somewhat lower than schools 8 and 11 on Intellectual Climate, also has a student body that ranks relatively high on Intellectual Interests and Intellectual Orientation, and so the need-press differences are minimal and not as great as they are for schools 8 and 11. Much of this effect is attributable to the earlier discussed differences in need-press interactions for the scales of Reflectiveness, Understanding, and Humanities-Social Sciences, all of which contribute to the two Intellectual Climate scores. School 6, as might be anticipated, again appears to be ahead of its student body in its emphasis on intellectual values. And schools 2 and 9, as might be expected again from previous evidence, lags quite far behind.

It is interesting to study the similarities and differences between scales with the same or similar labels and to consider the changes in school status that result from the differences. The

## Table 8

Standard Score Means and HSCI-SAI Difference Scores for First and Second Order Intellectual Climate and Intellectual Orientation Scores

| Scale | School | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| HSCI Intellectual Climate (1st order) | 10.00 | 9.69 | 9.72 | 10.00 | 9.80 | 10.27 | 9.88 | 10.31 | 9.63 | 10.08 | 10.43 |
| SAI Intellectual Interests (1st order) | 9.81 | 9.93 | 9.96 | 10.00 | 9.90 | 10.09 | 9.92 | 10.13 | 9.90 | 10.17 | 10.11 |
| Difference | .19 | -.24 | -.24 | .00 | -.10 | .18 | -.04 | .18 | -.27 | -.09 | .32 |
| HSCI Intellectual Climate (1st order) | 10.00 | 9.69 | 9.72 | 10.00 | 9.80 | 10.27 | 9.88 | 10.31 | 9.63 | 10.08 | 10.43 |
| SAI Intellectual Orientation (2nd order) | 9.83 | 9.88 | 10.19 | 9.96 | 9.87 | 10.09 | 10.02 | 9.98 | 9.86 | 10.06 | 10.16 |
| Difference | .17 | -.19 | -.47 | .04 | -.07 | .19 | -.14 | .33 | -.23 | .02 | .27 |
| HSCI Intellectual Climate (2nd order) | 9.74 | 9.53 | 10.08 | 9.96 | 9.83 | 10.24 | 9.83 | 10.22 | 9.49 | 10.17 | 10.63 |
| SAI Intellectual Interests (1st order) | 9.81 | 9.93 | 9.96 | 10.00 | 9.90 | 10.09 | 9.92 | 10.13 | 9.90 | 10.17 | 10.11 |
| Difference | -.07 | -.40 | .12 | -.04 | -.07 | .15 | -.09 | .09 | -.41 | .00 | .52 |
| HSCI Intellectual Climate (2nd order) | 9.74 | 9.53 | 10.08 | 9.96 | 9.83 | 10.24 | 9.83 | 10.22 | 9.49 | 10.17 | 10.63 |
| SAI Intellectual Orientation (2nd order) | 9.83 | 9.88 | 10.19 | 9.96 | 9.87 | 10.08 | 10.02 | 9.98 | 9.86 | 10.06 | 10.16 |
| Difference | -.09 | -.35 | -.11 | .00 | -.04 | .16 | -.19 | .24 | -.37 | .11 | .47 |

rank-difference correlation between the first order and second order Intellectual Climate scores was .85, but this still permitted status changes in two schools. School 3's standard score increased from 9.72 for the first order Intellectual Climate score to 10.08 for the second order Intellectual Climate score, primarily because it ranked so high on the Work-Play and Student Dignity scales that were included in the latter. School 1's standard score, on the other hand, decreased from 10.00 (first order) to 9.74 (second order) because it ranked so low on Work-Play, Student Dignity, and Aspiration. The rank-difference correlation between the SAI Intellectual Interests and Intellectual Orientation scores was .70, which suggested even more shifts in status or ranks. School 3's standard score was 9.96 on Intellectual Interests and 10.19 on Intellectual Orientation, primarily because the student body ranked so high on the Audacity, Applied Interest, and Motivation scales that were included in the latter. School 8's scores went from 10.13 to 9.98 because its student body ranked so low on the Self-Assertion and Audacity scales of the Intellectual Orientation dimension. These shifts, of course, would have some effect on the nature of the need-press interactions that would appear. The immediate practical effect of such brief analyses as these is to alert one to the rather appreciable changes that can occur with a slight change in the operational definition of a variable. This consideration will be important in some analyses to be reported in later sections of this report.

The evidence that has been presented relevent to question 4 suggests that differences in "intellectual climates" do exist between high schools, that student bodies differ with respect to intellectual interests and general intellectual orientation, and that there therefore exist different and distinctive need-press interactions between intellectual climates and student intellectual needs. There is additional evidence that variables like "intellectual climate" can be defined operationally in many different ways, and that these differences in operational definitions and assessment and scoring procedures can result in rather different findings about the status of a given school with respect to environmental press or student need patterns in the intellectual area.

## Question 5

In the original design of this research the "intellectual climate" variable was to assume an important role. The fifth question, like the fourth, was focussed on this variable. It raised the issue:

What environmental variables are associated with a favorable "intellectual climate" as defined by the HSCI? Are certain characteristic student needs also associated with a favorable intellectual climate?

An approach of this type is certainly not unique to this research, since it had previously been attempted by Stern at the college level (24). Stern selected groups scoring high and low on Intellectual Climate and then compared them with respect to HSCI and SAI scale scores and item responses. Because of the abovementioned problems concerning the operational definition of "intellectual climate," however, it was by no means clear whether selection of groups in terms of this variable would yield readily interpretable results, or whether there was any logical or empirical justification for choosing one Intellectual Climate score in preference to the other. Furthermore, both Intellectual Climate scores seemed to suffer from inadequacies stemming from their relationship with the achievement variable. Press for achievement must certainly be considered an important aspect of any intellectual climate dimension, and yet the Achievement scale was virtually buried among a multitude of other less relevant scales in the case of the second order Intellectual Climate score and omitted entirely from the first order Intellectual Climate score. In view of these considerations it was finally decided to use the press for Achievement scale score in lieu of any Intellectual Climate score, particularly since it was not so confusingly multi-dimensional and could be defined operationally as the simple total of ten readily defined items.

To provide evidence relevant to this revised question the three highest-ranking schools on the press for Achievement scale were identified and assigned to a high press for Achievement group. From Table 7 it can be seen that the three schools assigned to this group were schools 8, 10, and 11. The three lowest-ranking schools on the press for Achievement scale were also identified and assigned to a low press for Achievement group. These schools were schools 2, 5, and 9. Although the scale score of school 3 was low enough to qualify it for inclusion in this group, it was felt that the inclusion of a technical and industrial school of this type would unnecessarily confound some of the comparisons that were sought. "t" tests were computed between the means of the low and high press for Achievement groups for all the HSCI scores and all the SAI scores. In addition, the 30 items in both instruments which displayed the greatest differences in percentage of endorsement between the two groups were identified. The resulting data, it was hoped, would provide insight into the environmental and student need variables associated with academic settings characterized by high and low press for achievement.

Tables 9 and 10 show the means and "t" ratios for the HSCI scale scores and for the HSCI first and second order factor scores respectively. Table 11 shows the 30 items in the HSCI that had the greatest differences in endorsement between the two groups. From Table 9 it can be observed that the group of schools ranking high on press for Achievement also tends to rank high on many other environmental press as well. There appears to be some evidence that there is a general school spirit or school morale factor which is characterized not only by press for Achievement but also by evidence of many opportunities for participating in school activities and relating to other students, by high student energy, and by lack of aggressive factors in the environment. An examination of the highest "t" values in Table 9 will illustrate what is meant. The highest value in the table is for the Affiliation-Rejection scale, which is associated with a 2.32 difference in means in favor of the high press for Achievement group on a scale of only 10 items. Reference to Table 11 will reveal that there were 5 items from this scale that were included in the 30 items that differentiated most between the two groups: items 34, 94, 154, 184, and 254. All of these items except one refer to opportunities to participate in school activities; the remaining one (item 34), which has the greatest difference in endorsement of all the items in the table, pertains to evidence of general school spirit. These opportunities for participation also provide settings in which students can achieve some measure of social visibility, and this is reflected in the difference for the Exhibitionism scale. The energy that students invest in this activity in the high press for Achievement group is evidenced by the difference for the Energy scale; particularly interesting is item 233 of that scale (Table 11), with results showing that the student in the high press for Achievement group is more likely to perceive his school as something more than a place where you go to classes, study, and then go home again. The relative lack of student aggressive reactions and destructiveness toward school property in the high press for Achievement group is revealed in the results for the Aggression scale and illustrated again in items 95, 155, 215, and 245 of Table 11. The factor scores in Table 10 with the highest "t" values express the matter well, for there it can be observed that the students in the high press for Achievement group have better opportunities for Group Life and Self Expression. This

Table 9

HSCI Means and "t" Ratios for Groups with Low and High Press for Achievement

| Scale | Means and Standard Deviations | | | | t | p |
|---|---|---|---|---|---|---|
| | Group 1: Low Achievement Press | | Group 2: High Achievement Press | | | |
| | M | SD | M | SD | | |
| 1. Abasement-Assurance | 5.20 | 2.14 | 4.23 | 2.20 | 8.95 | .001 |
| 2. Achievement | 5.02 | 1.80 | 6.68 | 1.81 | 18.48 | .001 |
| 3. Adaptability-Defensiveness | 4.92 | 1.59 | 5.29 | 1.69 | 4.56 | .001 |
| 4. Affiliation-Rejection | 4.28 | 2.03 | 6.60 | 1.90 | 23.79 | .001 |
| 5. Aggression-Blame Avoidance | 5.12 | 2.38 | 2.81 | 2.31 | 19.86 | .001 |
| 6. Change-Sameness | 4.95 | 1.49 | 5.69 | 1.71 | 9.25 | .001 |
| 7. Conjunctivity-Disjunctivity | 5.72 | 2.37 | 7.07 | 2.10 | 12.18 | .001 |
| 8. Counteraction-Inferiority Avoidance | 5.44 | 1.68 | 5.95 | 1.67 | 6.10 | .001 |
| 9. Deference-Restiveness | 4.67 | 1.58 | 4.86 | 1.55 | 2.47 | .05 |
| 10. Dominance-Tolerance | 6.90 | 1.88 | 6.39 | 1.98 | 5.29 | .001 |
| 11. Ego Achievement | 4.36 | 1.92 | 5.35 | 2.05 | 9.87 | .001 |
| 12. Emotionality-Placidity | 5.25 | 1.56 | 5.98 | 1.63 | 9.13 | .001 |
| 13. Energy-Passivity | 3.71 | 2.17 | 5.71 | 2.50 | 17.13 | .001 |
| 14. Exhibitionism-Inferiority Avoidance | 4.41 | 1.79 | 6.17 | 1.81 | 19.59 | .001 |
| 15. Fantasied Achievement | 4.34 | 1.47 | 4.35 | 1.48 | .20 | NS |
| 16. Harm Avoidance-Risktaking | 3.75 | 1.55 | 3.98 | 1.66 | 2.92 | .01 |
| 17. Humanities, Social Science | 2.61 | 1.78 | 3.69 | 2.04 | 11.30 | .001 |
| 18. Impulsiveness-Deliberation | 5.86 | 1.53 | 5.37 | 1.83 | 5.78 | .001 |
| 19. Narcissism | 6.44 | 2.06 | 7.70 | 1.71 | 13.44 | .001 |
| 20. Nurturance-Rejection | 4.06 | 2.14 | 5.91 | 2.45 | 15.98 | .001 |
| 21. Objectivity-Projectivity | 5.40 | 2.57 | 6.65 | 2.40 | 10.13 | .001 |
| 22. Order-Disorder | 5.45 | 1.68 | 6.26 | 1.77 | 9.43 | .001 |
| 23. Play-Work | 5.06 | 1.76 | 6.46 | 1.69 | 16.41 | .001 |
| 24. Practicalness-Impracticalness | 6.70 | 1.73 | 6.77 | 1.53 | .86 | NS |
| 25. Reflectiveness | 4.52 | 1.86 | 5.31 | 2.04 | 8.14 | .001 |
| 26. Science | 4.54 | 1.87 | 5.38 | 1.88 | 8.94 | .001 |
| 27. Sensuality-Puritanism | 2.89 | 1.65 | 3.95 | 1.89 | 12.05 | .001 |
| 28. Sexuality-Prudishness | 7.21 | 1.74 | 6.36 | 2.04 | 8.91 | .001 |
| 29. Supplication-Autonomy | 3.70 | 2.08 | 5.12 | 2.16 | 13.47 | .001 |
| 30. Understanding | 5.03 | 1.72 | 5.98 | 1.88 | 10.46 | .001 |

Table 10

HSCI Means and "t" Ratios for Groups with Low and High Press for Achievement Scores: First and Second Order Factor Scores

| Scale | Means and Standard Deviations | | | | t | p |
|---|---|---|---|---|---|---|
| | Group 1: Low Achievement Press | | Group 2: High Achievement Press | | | |
| | M | SD | M | SD | | |
| **First Order Factor Scores** | | | | | | |
| 1. Work-Play | 15.63 | 3.94 | 15.80 | 4.46 | .78 | NS |
| 2. Non-Vocational Climate | 21.15 | 4.11 | 20.77 | 4.28 | 1.82 | NS |
| 3. Aspiration Level | 19.76 | 3.73 | 21.97 | 4.11 | 11.26 | .001 |
| 4. Intellectual Climate | 19.38 | 5.75 | 23.29 | 6.69 | 12.49 | .001 |
| 5. Student Dignity | 13.30 | 5.29 | 16.03 | 5.46 | 10.18 | .001 |
| 6. Academic Climate | 7.15 | 3.13 | 9.07 | 3.42 | 11.71 | .001 |
| 7. Academic Achievement | 24.92 | 7.01 | 31.39 | 7.34 | 18.08 | .001 |
| 8. Self-Expression | 17.73 | 5.42 | 23.20 | 5.88 | 19.35 | .001 |
| 9. Group Life | 16.96 | 5.00 | 22.93 | 5.53 | 22.63 | .001 |
| 10. Academic Organization | 31.30 | 7.11 | 37.72 | 7.25 | 17.94 | .001 |
| 11. Social Form | 27.37 | 5.17 | 31.75 | 4.97 | 17.34 | .001 |
| 12. Play-Work | 24.37 | 3.94 | 24.20 | 4.46 | .78 | NS |
| 13. Vocational Climate | 28.85 | 4.11 | 29.23 | 4.28 | 1.82 | NS |
| **Second Order Factor Scores** | | | | | | |
| 14. Intellectual Climate | 139.02 | 24.81 | 161.52 | 29.06 | 16.61 | .001 |
| 15. Non-Intellectual Climate | 146.58 | 21.09 | 169.03 | 21.17 | 21.32 | .001 |

Table 11

HSCI Items with the Greatest Differences in Percentage of Endorsement between Groups with Low and High Press for Achievement

| Item | Percent Endorsing | | Diff. |
|---|---|---|---|
| | Group 1: Low Achievement Press | Group 2: High Achievement Press | |
| 14. Competition is keen for parts in student plays. | 27 | 70 | 43 |
| 16. A great many students are involved in intramural sports and other athletic activities. | 51 | 85 | 34 |
| 17. Many teachers and students are concerned with literary, musical, artistic, or dramatic activities outside the classroom. | 35 | 65 | 30 |
| 23. Students really get excited at an athletic contest. | 44 | 88 | 44 |
| 34. There is a lot of school spirit. | 08 | 67 | 59 |
| 39. Most students look up to their teachers and admire them. | 24 | 49 | 25 |
| 43. Students put a lot of energy into everything they do - in class and out. | 21 | 48 | 27 |
| 46. Club initiations and class rivalries sometimes get a little rough. | 46 | 21 | -25 |
| 53. There is a lot of student enthusiasm and support for the big school events. | 25 | 74 | 49 |
| 73. Few students here would ever work or play to the point of being completely worn out. | 64 | 38 | -26 |
| 77. Few students would be interested in an educational film about writers and poets. | 83 | 51 | -32 |
| 94. Few students stay around after school for different activities or sports. | 60 | 23 | -37 |
| 95. The desks are all cut up from doodling with knives and pencils. | 62 | 36 | -26 |
| 103. There are so many things to do here that students are busy all the time. | 24 | 54 | 31 |
| 116. Few students are planning careers in science. | 66 | 38 | -28 |
| 122. Few students try hard to get on the honor roll. | 66 | 34 | -32 |

Table 11 (continued)

| Item | Percent Endorsing<br>Group 1: Low Achievement Press | <br>Group 2: High Achievement Press | Diff. |
|---|---|---|---|
| 154. Students seldom get out and support the school athletic teams | 79 | 20 | -59 |
| 155. Student arguments often turn into fights. | 51 | 21 | -30 |
| 182. Most students around here expect to go on to college. | 61 | 91 | 30 |
| 184. There is little interest in school clubs and social groups. | 65 | 23 | -42 |
| 200. Students really support fund drives such as the March of Dimes, Community Chest, Red Cross, CARE, Etc. | 37 | 63 | 26 |
| 209. One nice thing about this school is the personal interest taken in the students. | 28 | 56 | 28 |
| 215. There are frequent fights in the lunchroom or on the school grounds. | 54 | 20 | -34 |
| 228. There is much shouting and yelling in the halls and cafeteria. | 75 | 44 | -31 |
| 229. Good manners and making a good impression are important here. | 53 | 79 | 26 |
| 233. Students here don't do much except go to classes, study, and then go home again. | 54 | 23 | -31 |
| 245. The washrooms are always a mess because the students throw paper around. | 48 | 22 | -26 |
| 254. There is little interest here in student dramatic or musical activities. | 74 | 25 | -49 |
| 263. Most students take their school work very seriously. | 36 | 62 | 26 |
| 282. Very few things here arouse much excitement or feeling. | 73 | 38 | -35 |

does not necessarily mean that all student bodies in the high group display more personal friendliness than students in the low group, since we noted earlier that the students of school 10, the suburban school, ranked themselves very low in this respect. What it apparently does mean is that a strong press for achievement is most likely to occur in a high school setting where there are many opportunities for getting rid of excess energy and attaining social visibility and need satisfaction by participating in different school activities, and that such a school is likely to be characterized by school spirit and high school morale.

Tables 12 and 13 show the means and "t" ratios for the SAI scale scores and for the SAI first and second order factor scores respectively. Group differences for the SAI were not nearly as marked as they were for the HSCI, and several were not significant. Students from the high press for Achievement group apparently ranked higher on Energy, need for Achievement, Self-Assertion, Intellectual Interests, Motivation, and Intellectual Orientation. Needless to say, these are all traits whose presence in a student body would do much to facilitate the development of an academic environment with a strong press for achievement, and it would be impossible to disentangle completely the causal relationships and interactions involved. However, the differences are not nearly so great and therefore probably not nearly so influential as those for the HSCI. Additional evidence for this is presented in Table 14, which shows the 10 SAI items that displayed the greatest differences in endorsement between the two groups. The greatest difference is only 14 percentage points (as compared with 59 for the HSCI), and the table yields few insights. Again we see at least presumptive evidence that high school environments differ more than the student bodies that exist in them.

The evidence presented relevant to question 5 suggests that schools with a strong press for achievement and schools with a weak press for achievement can be differentiated in terms of many other environmental variables as well, and that the press for achievement seems to be associated with a cluster of variables which together define a condition of strong school spirit or morale, e.g., many opportunities for participation in school activities, high student energy, lack of aggressive factors in the environment, etc. Certain differences in need patterns are also characteristic of students coming from school environments with high and low press for achievement, but these differences do not appear to be nearly as great as the environmental press differences.

Table 12

SAI Means and "t" Ratios for Groups with Low and High Press for Achievement Scores

| Scale | Means and Standard Deviations | | | | t | p |
|---|---|---|---|---|---|---|
| | Group 1: Low Achievement Press | | Group 2: High Achievement Press | | | |
| | M | SD | M | SD | | |
| 1. Abasement-Assurance | 4.00 | 1.78 | 4.19 | 1.70 | 2.13 | .05 |
| 2. Achievement | 5.17 | 2.37 | 5.56 | 2.26 | 3.35 | .001 |
| 3. Adaptability-Defensiveness | 4.78 | 2.11 | 4.43 | 2.19 | 3.17 | .01 |
| 4. Affiliation-Rejection | 7.00 | 2.31 | 7.09 | 2.47 | .78 | NS |
| 5. Aggression-Blame Avoidance | 4.52 | 2.43 | 4.65 | 2.41 | .99 | NS |
| 6. Change-Sameness | 6.05 | 2.00 | 6.07 | 2.11 | .11 | NS |
| 7. Conjunctivity-Disjunctivity | 5.16 | 2.48 | 5.24 | 2.24 | .71 | NS |
| 8. Counteraction-Inferiority Avoidance | 5.42 | 2.25 | 5.66 | 2.26 | 2.07 | .05 |
| 9. Deference-Restiveness | 5.89 | 2.19 | 6.07 | 2.16 | 1.66 | NS |
| 10. Dominance-Tolerance | 5.26 | 2.44 | 5.79 | 2.39 | 4.24 | .001 |
| 11. Ego Achievement | 4.58 | 2.49 | 5.05 | 2.45 | 3.68 | .001 |
| 12. Emotionality-Placidity | 4.53 | 2.03 | 4.82 | 2.23 | 2.60 | .01 |
| 13. Energy-Passivity | 5.94 | 1.78 | 6.41 | 1.69 | 5.36 | .001 |
| 14. Exhibitionism-Inferiority Avoidance | 3.66 | 2.27 | 4.02 | 2.31 | 3.03 | .01 |
| 15. Fantasied Achievement | 4.20 | 2.39 | 4.15 | 2.28 | .42 | NS |
| 16. Harm Avoidance-Risktaking | 5.03 | 2.37 | 4.59 | 2.43 | 3.56 | .001 |
| 17. Humanities, Social Science | 4.00 | 2.86 | 4.53 | 2.92 | 3.59 | .001 |
| 18. Impulsiveness-Deliberation | 5.23 | 1.94 | 5.57 | 2.08 | 3.33 | .001 |
| 19. Narcissism | 6.06 | 2.22 | 6.06 | 2.26 | .08 | NS |
| 20. Nurturance-Rejection | 6.37 | 2.44 | 6.80 | 2.27 | 3.57 | .001 |
| 21. Objectivity-Projectivity | 7.90 | 1.83 | 8.22 | 1.79 | 3.49 | .001 |
| 22. Order-Disorder | 5.65 | 2.87 | 5.03 | 2.86 | 4.16 | .001 |
| 23. Play-Work | 6.18 | 2.37 | 6.22 | 2.35 | .29 | NS |
| 24. Practicalness-Impracticalness | 5.63 | 2.27 | 5.80 | 2.32 | 1.43 | NS |
| 25. Reflectiveness | 6.03 | 2.20 | 6.36 | 2.09 | 2.95 | .01 |
| 26. Science | 3.61 | 3.10 | 3.93 | 3.15 | 1.94 | NS |
| 27. Sensuality-Puritanism | 5.42 | 1.83 | 5.38 | 1.87 | .42 | NS |
| 28. Sexuality-Prudishness | 5.64 | 2.70 | 5.57 | 2.73 | .52 | NS |
| 29. Supplication-Autonomy | 6.18 | 2.03 | 6.40 | 2.06 | 2.10 | .05 |
| 30. Understanding | 4.94 | 2.66 | 5.52 | 2.59 | 4.30 | .001 |

## Table 13

SAI Means and "t" Ratios for Groups with Low and High Press for Achievement Scores:

First and Second Order Factor Scores

| Scale | Group Means and Standard Deviations | | | | t | p |
|---|---|---|---|---|---|---|
| | Group 1: Low Achievement Press | | Group 2: High Achievement Press | | | |
| | M | SD | M | SD | | |
| First Order Factor Scores | | | | | | |
| 1. Self-Assertion | 17.71 | 7.20 | 19.01 | 6.88 | 3.62 | .001 |
| 2. Audacity-Timidity | 17.30 | 6.83 | 18.13 | 6.59 | 2.41 | .05 |
| 3. Intellectual Interests | 18.59 | 8.68 | 20.34 | 8.26 | 4.03 | .001 |
| 4. Motivation | 21.47 | 6.95 | 23.17 | 6.66 | 4.87 | .001 |
| 5. Applied Interests | 14.89 | 5.81 | 14.76 | 6.01 | .43 | NS |
| 6. Constraint-Expressiveness | 20.94 | 6.01 | 20.02 | 6.64 | 2.81 | .01 |
| 7. Diffidence-Egoism | 17.63 | 4.45 | 18.02 | 4.36 | 1.70 | NS |
| 8. Orderliness | 19.52 | 6.75 | 18.63 | 6.68 | 2.59 | .01 |
| 9. Submissiveness | 21.04 | 6.18 | 21.49 | 5.81 | 1.48 | .05 |
| 10. Timidity-Audacity | 22.70 | 6.83 | 21.87 | 6.59 | 2.41 | .05 |
| 11. Closeness | 24.07 | 6.49 | 24.83 | 5.99 | 2.38 | .05 |
| 12. Sensuousness | 17.13 | 5.24 | 17.00 | 5.38 | .46 | NS |
| 13. Friendliness | 13.18 | 3.70 | 13.31 | 3.96 | .68 | NS |
| 14. Expressiveness-Constraint | 19.06 | 6.01 | 19.98 | 6.64 | 2.81 | .01 |
| 15. Egoism-Diffidence | 12.37 | 4.45 | 11.98 | 4.36 | 1.70 | NS |
| Second Order Factor Scores | | | | | | |
| 16. Intellectual Orientation | 89.95 | 27.64 | 95.41 | 26.04 | 3.97 | .001 |
| 17. Dependency Needs | 140.79 | 24.38 | 139.62 | 23.10 | .96 | NS |
| 18. Emotional Expression | 103.51 | 22.99 | 106.13 | 23.85 | 2.17 | .05 |
| 19. Educability | 95.51 | 26.09 | 98.39 | 24.02 | 2.25 | .05 |

Table 14

SAI Items with the Greatest Differences in Percentage of Endorsement between Groups with Low and High Press for Achievement

| Item | Percent Responding "Like" | | Diff. |
|---|---|---|---|
| | Group 1: Low Achievement Press | Group 2: High Achievement Press | |
| 72. Avoiding excitement or emotional tension. | 45 | 33 | -12 |
| 112. Arranging my clothes neatly before going to bed. | 63 | 50 | -13 |
| 140. Having people come to me with their problems. | 61 | 71 | 10 |
| 180. Losing myself in hard thought. | 57 | 67 | 10 |
| 202. Shining my shoes and brushing my clothes every day. | 51 | 37 | -14 |
| 210. Engaging in mental activity. | 56 | 70 | 14 |
| 228. Speaking or acting spontaneously. | 48 | 61 | 13 |
| 232. Keeping my room in perfect order. | 64 | 54 | -10 |
| 280. Influencing or controlling the actions of others. | 46 | 58 | 12 |
| 281. Converting or changing the view of others. | 45 | 55 | 10 |

## Question 6

We come now to the point in the research where the issues stated in objective 4 of the research become important, where we begin to ask more specific questions with respect to the correlates or predictive efficacy of these environmental variables in terms of criteria of importance. If significant differences in environmental press do exist between schools, do these differences have any influence on the choices an individual makes for the future? In particular, will differences in press for achievement be related to aspirations for future education? If a significant relationship of this type does exist, environmental press differences are certainly more than of theoretical interest alone; they would have a direct bearing on the realization of individual potential, and environmental press that could be demonstrated to be negative in influence could be adjudged to be educationally discriminatory. With these considerations in mind, the sixth question addressed itself to the following issue:

With socioeconomic status and scholastic aptitude controlled, will aspirations for post-high school education be related to differences in high school environments, and particularly to the press for achievement that characterizes those environments?

To secure evidence bearing on this question the HSCI standard scores for each school appearing in Tables 7 and 8 were correlated with two indices of educational aspiration from question 2 on the student questionnaire (Appendix C). As may be observed, the question asks the student to indicate, assuming money were no problem, just how much additional education or training he would like to have after he graduates from high school. The first index of educational aspiration was the percentage of the senior student body who endorsed alternatives 3 and 4, indicating that they either would like four years of college and the B. A. degree or that they would like this and further post-graduate work or work in a professional school. The second index was computed by obtaining for each school an average value for those who chose alternatives 1 through 4, letting the numbers assigned to the alternatives represent ascending degrees of desired education. Though perhaps less defensible than the first index, this second index was hypothesized to be more sensitive to aspirations beyond the B. A. degree. Actually, the pattern of correlations for the two indices turned out to be much the same.

Table 15 shows the correlations between the two indices of

## Table 15

### Correlations between School Means for Educational Aspiration and HSCI and SAI Variables

| Scale | | Educational | Aspiration | Socio-economic Status[3] | DAT |
|---|---|---|---|---|---|
| | | (% 3 & 4)[1] | (Av. 1-4)[2] | | |
| 1. Abasement-Assurance | HSCI | -07 | -04 | -06 | 12 |
| | SAI | -03 | 05 | 21 | 10 |
| | Diff. | -05 | -05 | -12 | 07 |
| 2. Achievement | HSCI | 82 | 85 | -64 | 73 |
| | SAI | 34 | 30 | -04 | 10 |
| | Diff. | 77 | 83 | -68 | 77 |
| 3. Adaptability | HSCI | 64 | 58 | -38 | 43 |
| | SAI | -67 | -64 | 54 | -52 |
| | Diff. | 72 | 67 | -47 | 51 |
| 4. Affiliation-Rejection | HSCI | 79 | 79 | -58 | 70 |
| | SAI | -02 | 08 | 41 | -07 |
| | Diff. | 82 | 79 | -72 | 74 |
| 5. Aggression-Blame Avoidance | HSCI | -54 | -56 | 38 | -64 |
| | SAI | 28 | 25 | -58 | 46 |
| | Diff. | -57 | -57 | 49 | -70 |
| 6. Change-Sameness | HSCI | 32 | 39 | 15 | -04 |
| | SAI | 35 | 42 | -61 | 55 |
| | Diff. | 15 | 19 | 34 | -22 |
| 7. Conjunctivity-Disjunctivity | HSCI | 44 | 45 | -21 | 36 |
| | SAI | -43 | -39 | 63 | -61 |
| | Diff. | 77 | 76 | -69 | 83 |
| 8. Counteraction-Inferiority Avoidance | HSCI | 34 | 27 | -29 | 20 |
| | SAI | 48 | 44 | -36 | 33 |
| | Diff. | 06 | 01 | -09 | 01 |
| 9. Deference-Restiveness | HSCI | -05 | -05 | 47 | -19 |
| | SAI | -25 | -23 | 58 | -50 |
| | Diff. | 13 | 13 | 10 | 16 |
| 10. Dominance-Tolerance | HSCI | -08 | -10 | -09 | -03 |
| | SAI | 63 | 61 | -43 | 45 |
| | Diff. | -28 | -29 | 08 | -18 |
| 11. Ego Achievement | HSCI | 25 | 37 | -11 | 20 |
| | SAI | 78 | 81 | -46 | 41 |
| | Diff. | -21 | -10 | 16 | -03 |

Table 15 (continued)

| Scale | | Educational Aspiration | | Socio-economic Status$^3$ | DAT |
|---|---|---|---|---|---|
| | | (% 3 & 4)$^1$ | (Av. 1-4)$^2$ | | |
| 12. Emotionality-Placidity | HSCI | 22 | 29 | 01 | 31 |
| | SAI | 56 | 59 | -67 | 69 |
| | Diff. | -16 | -12 | 42 | -17 |
| 13. Energy-Passivity | HSCI | 36 | 38 | -13 | 33 |
| | SAI | 49 | 48 | -37 | 57 |
| | Diff. | 15 | 19 | 04 | 09 |
| 14. Exhibitionism-Inferiority Avoidance | HSCI | 72 | 75 | -48 | 57 |
| | SAI | 17 | 25 | -13 | 32 |
| | Diff. | 73 | 74 | -48 | 52 |
| 15. Fantasied Achievement | HSCI | 04 | 12 | -23 | -03 |
| | SAI | -48 | -44 | 65 | -71 |
| | Diff. | 44 | 47 | -74 | 58 |
| 16. Harm Avoidance-Risk-taking | HSCI | -16 | -11 | 53 | -21 |
| | SAI | -49 | -39 | 60 | -53 |
| | Diff. | 41 | 34 | -24 | 41 |
| 17. Humanities, Social Sciences | HSCI | 57 | 67 | -30 | 25 |
| | SAI | 56 | 62 | -43 | 36 |
| | Diff. | 45 | 54 | -13 | 11 |
| 18. Impulsiveness-Deliberation | HSCI | -18 | -19 | -24 | -09 |
| | SAI | 75 | 76 | -81 | 79 |
| | Diff. | -62 | -63 | 31 | -57 |
| 19. Narcissism | HSCI | 54 | 58 | -51 | 75 |
| | SAI | -21 | -13 | 54 | -45 |
| | Diff. | 60 | 60 | -73 | 90 |
| 20. Nurturance-Rejection | HSCI | 33 | 38 | 02 | 31 |
| | SAI | 34 | 39 | -18 | 46 |
| | Diff. | 22 | 26 | 12 | 14 |
| 21. Objectivity-Projectivity | HSCI | 22 | 19 | 04 | -02 |
| | SAI | 48 | 44 | -23 | 43 |
| | Diff. | -16 | -17 | 18 | -30 |
| 22. Order-Disorder | HSCI | 33 | 37 | -09 | 41 |
| | SAI | -74 | -68 | 93 | -78 |
| | Diff. | 71 | 71 | -63 | 82 |
| 23. Play-Work | HSCI | 67 | 65 | -71 | 75 |
| | SAI | -01 | -01 | -08 | 18 |
| | Diff. | 67 | 65 | -68 | 68 |

Table 15 (continued)

| Scale | | Educational | Aspiration | Socio-economic Status[3] | DAT |
|---|---|---|---|---|---|
| | | (% 3 & 4)[1] | (Av. 1-4)[2] | | |
| 24. Practicalness-Impracticalness | HSCI | -58 | -56 | 58 | -43 |
| | SAI | -41 | -41 | 67 | -53 |
| | Diff. | -32 | -27 | -23 | 23 |
| 25. Reflectiveness | HSCI | 33 | 44 | -12 | 27 |
| | SAI | 66 | 73 | -54 | 56 |
| | Diff. | -04 | 05 | 25 | -04 |
| 26. Science | HSCI | 31 | 38 | -10 | 18 |
| | SAI | -02 | -04 | 27 | -34 |
| | Diff. | 42 | 53 | -36 | 53 |
| 27. Sensuality-Puritanism | HSCI | 25 | 24 | -24 | 39 |
| | SAI | 38 | 40 | -47 | 41 |
| | Diff. | 09 | 08 | -04 | 20 |
| 28. Sexuality-Prudishness | HSCI | -13 | -02 | -02 | -04 |
| | SAI | -31 | -26 | 45 | -35 |
| | Diff. | 30 | 40 | -22 | 28 |
| 29. Supplication-Autonomy | HSCI | 33 | 31 | -02 | 16 |
| | SAI | 04 | 10 | 45 | -18 |
| | Diff. | 38 | 33 | -25 | 29 |
| 30. Understanding | HSCI | 23 | 32 | 05 | 14 |
| | SAI | 58 | 64 | -48 | 49 |
| | Diff. | -06 | 01 | 35 | -12 |
| HSCI Intellectual Climate (first order) | | 43 | 53 | -23 | 32 |
| HSCI Academic Achievement (first order) | | 52 | 55 | -29 | 44 |
| HSCI Intellectual Climate (second order) | | 41 | 45 | -14 | 26 |
| SAI Intellectual Interests (first order) | | 59 | 65 | -36 | 31 |
| SAI Intellectual Orientation (second order) | | 29 | 31 | 01 | 00 |
| SAI Educability (second order) | | -20 | -16 | 53 | -40 |

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[1] Refers to % of student group endorsing alternatives 3 & 4 in question #2.

[2] Refers to student group average for alternatives 1-4 in question #2.

[3] Scoring is reversed for socioeconomic status; the lower values represented the higher socioeconomic status.

educational aspiration and the scale scores and selected factor scores of the HSCI. To facilitate interpretation the correlations between the HSCI scores and DAT and socioeconomic status are also presented in the same table. As indicated in the footnote at the bottom of the table, the method of computing socioeconomic status associated the higher status with the lower index values, and the correlations must be interpreted accordingly. Because the data were available and of interest, the correlations for the SAI scores and the difference scores (Tables 7 and 8) are presented in the same table.

A matter of immediate interest in this table is the fact that the highest HSCI correlation with educational aspiration is that for the HSCI press for Achievement scale. This correlation of .82 is significant at the .01 level. The correlation with the second index of aspiration is even higher, .85. It is obvious, however, that there might be other, confounding variables associated with the press for achievement that are more responsible for this high correlation than differences in press for achievement per se. Particularly important among these would be the variables of scholastic aptitude and socioeconomic status. To remove the influence of these variables a second order partial correlation was computed between the first index of educational aspiration and press for Achievement, partialing out the effect of socioeconomic status and DAT. This second-order partial correlation had a value of .70. When the t technique for assessing the significance of a partial correlation coefficient based on a small sample was applied (10, p. 167), this correlation of .70 was found to be significant at the .05 level. Thus there appears to be rather solid evidence that a strong press for achievement in the high school setting does result in higher aspirations for post-high school education. Although one might argue that the direction of causation is reversed, and that it is the educational aspiration influenced by the home environment that somehow conditions the school press for achievement, it is somewhat difficult to support this argument in the face of the partial correlation reported and the fact of the lower correlation of socioeconomic status and press for Achievement. Schools ranking quite low in socioeconomic status, like schools 4 and 6, can rank much higher in terms of press for Achievement. The press for achievement variable may well be the most critical variable differentiating high school learning environments; its presence or absence may be the decisive factor for some students in determining whether they will seek the college training required for them to realize their potential. In other cases, it may be supposed, it may be responsible for encouraging some students to take the college route when they lack the scholastic ability to profit from it. But regardless of the direction of its influence, the press for achievement variable seems to have undeniable consequences for the development and well-being of students.

Although the above conclusion is probably the most important to be drawn from Table 15, there are several other findings in the table that are important as well. It is apparent, for example, that several other environmental press tend to be associated with educational aspiration, though to a lesser degree than press for achievement. Among the more important of these are the following:

The press for Affiliation. It will be recalled that items in this scale have content that refers either to a strong school spirit or to the many opportunities that exist for participation in school activities, Student bodies with strong aspirations for higher education tend to be located in school environments characterized by this school spirit and by these many opportunities to participate in activities. A strong press for affiliation is not antithetical to a strong press for achievement and may even be supportive of it.

The press for Exhibitionism. The items in this scale again focus on opportunities for participating in activities but tend to emphasize much more the social visibility that can be obtained by such participation. Student bodies with high educational aspirations tend to come from institutional settings where such opportunities for exhibitionism, social visibility, or self-expression are an inherent part of the environment.

The press for Play. This scale again is part of the school spirit-school activities syndrome. Several of the items in the scale refer to student enthusiasm within the context of many opportunities for participating in activities (items 23, 53, 83, 203, 293, etc.). High scores on this scale do not indicate a lack of interest in schoolwork. For example, the three schools ranking highest on this scale (schools 8, 10, and 11) for reasons mentioned just above were the very schools having the highest percentages of endorsement for item 263: "Most students take their school work very seriously." Since this item is in the Play scale, the unidimensionality of that scale is obviously suspect. It demonstrates once again, however, that school spirit, school morale, and opportunities for participation are typically the concomitants of strong press for achievement at the high school level.

Several of the SAI scales are also related to high educational aspirations. Among these are the scales of Impulsiveness and Order. The findings for Impulsiveness suggest that student bodies with high educational aspirations tend to be more spontaneous and those with low aspirations more controlled and inhibited. Perhaps this inhibited approach to the world is one reason why these people have a strong need for Order - as a protective device against a threatening and untrustworthy world. At any rate, these characteristics or needs are obviously related to socioeconomic status, as are many other scales of the SAI. It is evident too that it is the student bodies more likely to be characterized by the trait of Dominance that have the higher educational aspirations, a finding not inconsistent with that reported earlier for Impulsiveness and spontaneity. Perhaps the most interesting findings of all for the SAI are those relating to the various forms of need for achievement. Fantasied Achievement (e.g., "Thinking about what I could do that would make me famous") is negatively associated with scholastic aptitude and high educational aspirations and probably serves an ego defense function more than anything else. Need for Achievement _per se_, which seems to be defined operationally by scale items as setting difficult goals and working hard to achieve them, is little related to educational aspirations and even less related to scholastic aptitude. But Ego Achievement is quite highly related to educational aspirations and positively (but not significantly) related to scholastic aptitude. Items in this scale seem to refer to the kind of ego achievement that comes from being in a position of influence that allows one either to convert others to your point of view or to make a social contribution of some significance. As such it is probably one of the more sophisticated and socially sanctioned forms of achievement motivation, and it is not surprising that it should be associated with high educational aspirations. Higher education may be consciously or unconsciously perceived as the method _par excellence_ for implementing these kinds of goals.

The evidence presented relevant to question 6 suggests that aspiration for post-high school education is indeed significantly related to several environmental press, that the press for Achievement exhibits the highest relationship with aspiration and is an environmental force of some consequence in shaping the educational decisions of students, and that this press for Achievement typically exists in an institutional setting where there is strong school spirit and many opportunities for participation and self-expression in school activities. There is evidence as well that student needs, as operationally defined in the Stern Activities Index, are also related to educational aspirations.

### Question 7

The seventh question was also related to objective 4 of the research and again was related to any correlates or lasting effects which might be produced in students as a result of their being subjected to a particular kind of school environment. In this case, however, the question was concerned with any differences in student values that might be related and attributable to differences in school environments. It defined the issue in the following terms:

With socioeconomic status and scholastic aptitude held constant, will differences in the adolescent value system be related to differences in press for Achievement that exist between schools?

To secure evidence bearing on this question the percentage of the senior student body endorsing alternatives 1 through 4 was computed for question 4 of the student questionnaire (Appendix C). These percentages were then correlated with the school means for all 30 scale scores of the HSCI. Another analysis involved a "Values Inventory" that can be examined at the end of the student questionnaire (Appendix C). This "Values Inventory" consisted of 17 statements describing values that represented, in the words of the instructions, "...some ideas and feelings about the kind of things that would be important to us when we are adults and are on our own." The student is instructed to place a single check mark in front of the four statements that describe the four things that would be most important for him as an adult, and then to go back and double-check the single statement that would be the very most important for him as an adult. It was felt that the stated context of choice as an adult would serve to free the student from the internalized and introjected values of the parents and thus be a more valid indicator of what his true values actually were. The requirement to choose the most important value or values from a listing of values seemed quite concordant with the kind of ordering of values in terms of most, lesser, and least importance that most human beings consciously or unconsciously engage in as they develop a value hierarchy. The analysis conducted with this instrument consisted of computing the percentage of a student body that endorsed a given value as one of the four most important, and then correlating these school percentages for each value with the school means for each of the 30 HSCI scale scores.

Table 16 shows the percent of the senior student body for each school that endorsed alternatives 1 through 4 for question 4 of the student questionnaire. There are some real and interesting differences here. For 6 out of the 11 schools the highest proportion of students indicated that if they could have their choice they would prefer "...to be remembered here at school..." as being a "brilliant student." This question is quite similar to one used by Coleman in his work on the adolescent subculture (5); the greater popularity of the "brilliant student" category in this research may be attributable to the rapid changes that have taken place in the American high school since the Coleman study was undertaken. It is interesting that for the alternative "leader in activities" five of the student bodies either exhibit their lowest percentage of endorsement for this alternative, or their lowest percentage in combination with the alternative "athletic star;" yet for two of the schools (schools 10 and 11) the endorsement of the alternative "leader in activities" considerably outstrips that for other alternatives, and these two schools are the very schools ranking highest in press for Achievement.

Table 17 may shed some additional light on the matter. Here we have the correlations between the percentage of student body endorsement of each alternative and the school means for the HSCI scales. The "leader in activities" alternative may be observed to correlate positively and significantly with the HSCI scales of Achievement, Adaptability, Affiliation, Exhibitionism, Narcissism, and Play. It correlates negatively and significantly with Aggression. It also correlates significantly with socioeconomic status and DAT score. The pattern of correlations seen here provides rather strong evidence that the value choice for "leader in activities" is closely related to what was referred to earlier as a syndrome of environmental press characterizing a school setting of strong school spirit or high morale, with strong press for Achievement and many opportunities for group life and self expression through participation in the many available activities. The press for achievement in such settings as these is apparently not a matter of intellectual achievement alone, but rather a force stimulating students to try to excel or exert leadership in any social situation where such excellence or leadership, of whatever variety, would be acknowledged positively The schools most characterized by this syndrome, in fact, seem to have the institutional settings with environmental press most similar to what presently exist in the middle class business and professional world, with its emphasis on competitiveness, trying to

### Table 16

### Percent of Senior Student Body Exhibiting Preference for Alternative 1-4 on Question 4

| School | Percent of Endorsement for Alternatives | | | |
|---|---|---|---|---|
| | 1 Brilliant Student | 2 Athletic Star | 3 Most Popular | 4 Leader in Activities |
| 1 | 26 | 17 | 25 | 31 |
| 2 | 31 | 19 | 30 | 18 |
| 3 | 35 | 36 | 14 | 13 |
| 4 | 40 | 17 | 25 | 17 |
| 5 | 35 | 18 | 29 | 18 |
| 6 | 50 | 18 | 16 | 13 |
| 7 | 20 | 28 | 25 | 25 |
| 8 | 32 | 14 | 23 | 24 |
| 9 | 35 | 17 | 22 | 23 |
| 10 | 24 | 16 | 24 | 33 |
| 11 | 28 | 20 | 16 | 36 |

Note.-Total percentages amounting to less than 100% are accounted for by omitted responses.

## Table 17

### Correlations between Percent of Senior Student Body Endorsing Alternatives 1-4 on Question 4 and School Means for HSCI Scales

| HSCI Scale | Question 4 Alternative | | | |
|---|---|---|---|---|
| | 1 Brilliant Student | 2 Athletic Star | 3 Most Popular | 4 Leader in Activities |
| 1. Abasement-Assurance | -47 | -05 | 69 | 10 |
| 2. Achievement | -41 | -27 | -20 | 75 |
| 3. Adaptability-Defensiveness | -63 | -08 | 01 | 79 |
| 4. Affiliation-Rejection | -43 | -18 | -33 | 77 |
| 5. Aggression-Blame Avoidance | 52 | -13 | 32 | -70 |
| 6. Change-Sameness | 30 | -17 | -46 | 15 |
| 7. Conjunctivity-Disjunctivity | 07 | -12 | -52 | 35 |
| 8. Counteraction-Inferiority Avoidance | -20 | 14 | -34 | 30 |
| 9. Deference-Restiveness | 33 | -25 | -16 | 06 |
| 10. Dominance-Tolerance | -24 | -46 | 65 | 13 |
| 11. Ego Achievement | -06 | 17 | -51 | 22 |
| 12. Emotionality-Placidity | -13 | 07 | -35 | 40 |
| 13. Energy-Passivity | -08 | 18 | -56 | 35 |
| 14. Exhibitionism-Inferiority Avoidance | -25 | -19 | -35 | 63 |
| 15. Fantasied Achievement | 11 | 17 | -15 | -29 |
| 16. Harm Avoidance-Risktaking | 39 | 11 | -29 | -22 |
| 17. Humanities, Social Science | 07 | -44 | -25 | 36 |
| 18. Impulsiveness-Deliberation | 04 | -13 | 42 | -32 |
| 19. Narcissism | -55 | -33 | 14 | 80 |
| 20. Nurturance-Rejection | -04 | -05 | -43 | 45 |
| 21. Objectivity-Projectivity | 36 | 06 | -77 | 07 |
| 22. Order-Disorder | -27 | 07 | -21 | 46 |
| 23. Play-Work | -49 | -23 | -24 | 81 |
| 24. Practicalness-Impracticalness | 38 | 66 | -47 | -56 |
| 25. Reflectiveness | 16 | -57 | -13 | 35 |
| 26. Science | 23 | 10 | -63 | 05 |
| 27. Sensuality-Puritanism | -04 | -30 | -34 | 55 |
| 28. Sexuality-Prudishness | 11 | -74 | 66 | -01 |
| 29. Supplication-Autonomy | 06 | 14 | -64 | 28 |
| 30. Understanding | 06 | 06 | -52 | 21 |
| Socioeconomic Status | 70 | 32 | -22 | -77 |
| DAT (VR + NA) | -74 | -29 | 27 | 81 |

excel, and establishing one's right to leadership. The high correlation between socioeconomic status and the "leader in activities" alternative provides evidence that the syndrome is most likely to exist in schools with students of high socioeconomic status, and the environments of these schools probably serve as effective training grounds for the introduction of these students into the kind of world they are likely to face as adults. On the other hand, the absence of this kind of school environmental setting might well penalize the student who has the requisite talents and abilities and who might otherwise crave entrance and do well in this kind of world.

The seventh question, it will be recalled, asked specifically about the relationship between press for Achievement and adolescent values, with the influence of socioeconomic status and DAT controlled. To provide equally specific data bearing on this question, a second-order partial correlation was computed between press for Achievement and the "leader in activities" alternative, with the influence of socioeconomic status and DAT partialed out. This second-order partial correlation had a value of .41, which is not significant at the .05 level (10, p. 167). In comparing earlier evidence with that just presented, it appears that a strong press for achievement does influence educational aspiration above and beyond what would be expected from the associated influences of socioeconomic status and scholastic aptitude alone, but that its effect on student values cannot be separated statistically from the associated influences of socioeconomic status and scholastic aptitude. The school, home, and peer group undoubtedly interact in complex ways to mould student values, and their influence in most cases is mutually reinforcing and difficult to separate.

There are additional findings from Table 17 that deserve comment. Schools where the "most popular" alternative is highly endorsed seem to have quite different environmental press from those where the "leader in activities" alternative is highly endorsed. The "most popular" alternative is positively and significantly related to Abasement, Dominance, and Sexuality, and negatively and significantly related to Objectivity, Science, and Supplication. Its correlations with socioeconomic status and DAT are negligible. Preference for the "most popular" alternative seems to exist in those schools of relatively low morale where students evaluate the environment negatively and perceive elements of disinterest, nonsupport, lack of objectivity, and even distrust and hostility directed toward them from within their environment. The correlations for the "brilliant student" and "athletic star" alternatives include few attaining the level of magnitude required for the .05 level of significance (.60). However, the "brilliant student" alternative is highly but negatively related to socioeconomic status and DAT, i.e., those student bodies of lower socioeconomic status and lower DAT score tend to endorse the "brilliant student" alternative more highly. Indeed, the school with the lowest socioeconomic status and the lowest DAT average (school 6) may be observed from Table 16 to have the highest percentage of students endorsing the "brilliant student" alternative, in this case exactly one half of the senior student body. The student bodies that endorse this alternative also tend very strongly not to endorse the "leader in activities" alternative, as evidenced by a rank-difference correlation of -.80 between the percentage endorsements for the two alternatives. It may well be that endorsement of the "brilliant student" alternative is most likely to occur in those school settings where the student bodies have definite intellectual limitations and where the school environment provides few opportunities for need satisfaction through participation in school activities. With need satisfaction blocked in both areas, the high endorsement of the "brilliant student" alternative may represent a purely defensive response triggered by continual evidence of intellectual shortcomings.

Table 18 shows the differences between schools in the pattern of endorsement of the 17 values of the Values Inventory. After the percentage of the senior student body that had endorsed a given value as among the four most important had been computed, these percentages were ranked in order of magnitude to facilitate comparison between schools. There is complete agreement on 2 of the 17 values: "Being a good parent and having a family life that is close and satisfying" (item 15) always has the highest percentage of endorsement, and "Getting so interested and involved in one's line of work that one tends to forget oneself and live for it alone" (item 7) always ranks last in terms of endorsement. With many of the other items, however, there are interesting differences. The student body with the lowest socioeconomic status and lowest average DAT score (school 6) ranks a life that has lots of opportunities for good times (item 1) relatively higher than the others, and ranks the making of some kind of contribution of real significance to society (item 2) relatively lower than the others. It is the student body with the highest socioeconomic status (school 10) that ranks the latter value the highest of all. Apparently a degree of economic security is prerequisite to the development of altruistic tendencies, however deep or superficial they may be. The school 10 student body is also more likely to

Table 18

Rank Preference of the Seventeen Values of the Values Inventory for Each of the Eleven Schools in the Study

| Item in Values Inventory | Rank for Schools | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 1. Living a life that has lots of opportunities for good times. | 13 | 13 | 12 | 14 | 15 | 9 | 12 | 15 | 15 | 13 | 15 |
| 2. Making some kind of contribution that has real significance to society in general. | 11 | 11 | 10 | 10 | 7 | 13 | 10 | 11 | 9 | 4 | 9 |
| 3. Working hard to achieve a fairly high standard of living for oneself and one's family. | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 8 | 2 |
| 4. Living the kind of life that offers many opportunities to pursue intellectual interests. | 15 | 15 | 15 | 15 | 13 | 14 | 15 | 13 | 14 | 14 | 14 |
| 5. Having the time and money to pursue enjoyable hobbies or sports. | 5 | 6 | 4 | 8 | 8 | 7 | 6 | 7 | 10 | 6 | 10 |
| 6. Achieving or excelling in some field in a way that brings respect and approval from other people. | 7 | 10 | 5 | 7 | 6 | 6 | 7 | 8 | 8 | 10 | 11 |
| 7. Getting so interested and involved in one's line of work that one tends to forget oneself and live for it alone. | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 |
| 8. Having the kind of job that pays well enough so that one can enjoy some of the luxuries of life. | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 5 |
| 9. Having strong religious beliefs that really exert an important influence in one's life. | 9 | 9 | 7 | 5 | 9 | 5 | 9 | 10 | 5 | 12 | 4 |
| 10. Having an active social life with many opportunities for having fun with friends and acquaintances. | 6 | 4 | 6 | 6 | 5 | 8 | 4 | 5 | 11 | 9 | 6 |
| 11. Having the kind of occupation that has some status and importance in the minds of other people. | 14 | 12 | 8 | 13 | 12 | 12 | 13 | 14 | 13 | 16 | 13 |
| 12. Having the time and opportunity to maintain and enjoy one's cultural interests (e.g., music, art, poetry, good literature, etc). | 12 | 14 | 16 | 12 | 16 | 15 | 14 | 12 | 12 | 11 | 12 |
| 13. Organizing one's life so that there are many opportunities to travel to different and interesting places. | 8 | 7 | 11 | 9 | 11 | 11 | 8 | 6 | 7 | 2 | 7 |
| 14. Having clear-cut and high standards of right and wrong and living up to them faithfully. | 4 | 5 | 9 | 4 | 4 | 4 | 5 | 4 | 4 | 7 | 3 |

Table 18 (continued)

| Item in Values Inventory | Rank for Schools | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 15. Being a good parent and having a family life that is close and satisfying. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 16. Living the kind of life that has many opportunities for new experiences. | 10 | 8 | 13 | 11 | 10 | 10 | 11 | 9 | 6 | 5 | 8 |
| 17. Making important and widely acknowledged contributions to one's profession. | 16 | 16 | 14 | 16 | 14 | 16 | 16 | 16 | 16 | 15 | 16 |

rank higher than the others those values having to do with opportunities to travel (item 13) and to engage in new experiences (item 16); they are more likely to rank lower than the others those values having to do with working hard to achieve a high standard of living for oneself and one's family (item 3), having an occupation with status and importance (item 11), and having strong religious beliefs that really exert an influence on one's life (item 9). The standing of school 10 students with respect to the standard of living and status values is not surprising; if you always have had something as part of your environment you assume their existence will continue and you hardly stop to take note of them or to value them. Furthermore, the inevitable adolescent idealism is in all probability at its greatest (and can well afford to be) in the middle class community.

School 11, the Catholic school, differs from the other schools in ways that might have been predicted. Its student body ranks relatively higher than the others with respect to having strong religious beliefs that really exert an important influence on life (item 9), and having clear-cut and high standards of right and wrong and living up to them faithfully (item 14). It ranks relatively lower on the worldly value of achieving or excelling in some field in a way that brings respect and approval from others (item 6). However the students of school 3, the technical and industrial school, rank relatively higher than the others with respect to this same value and also with respect to the value implicit in item 11, which is concerned with having the kind of occupation that has some status and importance in the minds of other people. School 3 students also tend to downgrade more than the others the importance of having new experiences (item 16) and the importance of having high standards of right and wrong (item 14).

Table 19 shows the correlations that resulted when the percentage endorsements for the 17 values were correlated with the school means for the press for Achievement, Ego Achievement, and Fantasied Achievement scales of the HSCI. Also shown are the correlations of these values with the average DAT scores and socioeconomic status of the schools. The major findings here are that student bodies in schools ranking high on press for Achievement tend to reject the more superficial indices of achievement like having a job that has status and importance (item 11) and that will pay for the luxuries of life (item 8), while those student bodies from schools ranking high on Fantasied Achievement tend to be play oriented, hoping for a life with time and money to pursue enjoyable hobbies and sports (item 5) and many opportunities for

## Table 19

## Correlations between HSCI Press for Achievement Scales and the Seventeen Values of the Values Inventory

| Item in Values Inventory | HSCI Scales* | | | DAT | Socio-economic Status |
|---|---|---|---|---|---|
| | 2 | 11 | 15 | | |
| 1. Living a life that has lots of opportunities for good times. | -38 | 10 | 86 | -38 | 08 |
| 2. Making some kind of contribution that has real significance to society in general. | 51 | 07 | 41 | 68 | -80 |
| 3. Working hard to achieve a fairly high standard of living for oneself and one's family. | -57 | -02 | -22 | -76 | 84 |
| 4. Living the kind of life that offers many opportunities to pursue intellectual interests. | -16 | -23 | 21 | -39 | 13 |
| 5. Having the time and money to pursue enjoyable hobbies or sports. | -13 | 21 | 71 | 10 | -23 |
| 6. Achieving or excelling in some field in a way that brings respect and approval from other people. | -55 | 14 | 35 | -47 | 48 |
| 7. Getting so interested and involved in one's line of work that one tends to forget oneself and live for it alone. | -14 | 08 | 01 | -03 | 13 |
| 8. Having the kind of job that pays well enough so that one can enjoy some of the luxuries of life. | -77 | -36 | -19 | -58 | 70 |
| 9. Having strong religious beliefs that really exert an important influence in one's life. | 33 | 26 | -47 | -12 | 30 |
| 10. Having an active social life with many opportunities for having fun with friends and acquaintances. | -07 | 33 | 15 | 08 | 10 |
| 11. Having the kind of occupation that has some status and importance in the minds of other people. | -62 | -20 | 15 | -75 | 72 |
| 12. Having the time and opportunity to maintain and enjoy one's cultural interests (e.g., music, art, poetry, good literature, etc.) | 36 | 08 | 42 | 35 | -48 |
| 13. Organizing one's life so that there are many opportunities to travel to different and interesting places. | 50 | -05 | 41 | 75 | -91 |
| 14. Having clear-cut and high standards of right and wrong and living up to them faithfully. | 46 | 08 | -71 | 07 | 04 |
| 15. Being a good parent and having a family life that is close and satisfying. | 05 | 18 | -81 | -19 | 39 |

Table 19 (continued)

| Item in Values Inventory | HSCI Scale* 2 | 11 | 15 | DAT | Socio-economic Status |
|---|---|---|---|---|---|
| 16. Living the kind of life that has many opportunities for new experiences. | 47 | -15 | 25 | 61 | -88 |
| 17. Making important and widely acknowledged contributions to one's profession. | -48 | -29 | 26 | -43 | 17 |

*HSCI scales 2, 11, and 15 are the "Achievement," "Ego Achievement," and "Fantasied Achievement" scales respectively. (See Table 17.)

good times (item 1). Students from schools high in Fantasied Achievement also tend to endorse less highly those values related to being a good parent (item 15) and having clear-cut and high standards of right and wrong (item 14). Many of the values included in the 17-item Values Inventory also had significant correlations (i.e., above .60) with the average DAT and socioeconomic status of the schools. These correlations are self-explanatory and require no additional comment, particularly since earlier comments have already served to put them in context and interpret their meaning. No attempt was made to compute second-order partial correlations between the press for achievement indices and values, with socioeconomic status and DAT partialed out, for it was apparent that this would meet with the same fate as the related attempt with the question 4 item in the questionnaire.

In summary, the evidence presented relevant to question 7 suggests that there are indeed differences in the value orientations of the different student bodies, that these value differences are significantly correlated with many HSCI scales, that a value orientation focussed on leadership tends to be associated with the school spirit-school activity syndrome, but that this leadership orientation cannot in any sense be attributed to school press for Achievement alone but must be interpreted as one resultant of a complex of interacting forces emanating from home, school, and peer group.

## Question 8

The eighth question was again related to objective 4 of the research and was concerned with the immediate impact of the environmental press on the student's personal feelings about his high school. It raised the issue:

Are any of the environmental press significantly related to general student contentment and satisfaction with their high school environment?

To secure evidence bearing on this question the school means for all HSCI scale scores were correlated with the percentage of students in each school who endorsed alternatives 1 and 2 of items 1, 10, 11, 13, 14, 15 and 16 of the student questionnaire. The reader will need to refer to Appendix C to be apprised of the nature of these items and the direction of scoring for each item in terms of the procedure described above. The latter, of course, is reflected in the sign of the correlation.

Table 20 shows these correlations. As usual, any correlation above .60 is significant at the .05 level. Items 1, 11, 13, and 15 are all indices of general satisfaction or contentment with high school experiences. Correlations with these items are probably somewhat influenced by the highly favorable responses given by the students from the technical and industrial school (school 3); this may account for the higher-than-expected correlations with Practicalness, for example. Items 11 and 13 do not appear to yield correlations of much significance or interest. Items 1 and 15 seem to agree in identifying the following HSCI scales as correlates of student contentment: Ego Achievement, Energy, Harm Avoidance, Science, Practicalness, and Supplication. This is not the same cluster of variables that figured so importantly in defining the earlier mentioned school spirit-school activities syndrome, and the results for item 10 may help to explain why. Item 10 is a self-acceptance item that reflects the extent to which the respondent accepts himself as he is or would like to change himself. It can be observed from Table 20 that the tendency to be dissatisfied and to seek changes in oneself tends to be related to much the same complex of variables that determined the school spirit-school activities syndrome. It thus appears that the opportunities presented in an achievement-oriented, activity-oriented, leadership-oriented environment are inevitably accompanied by demands upon the individual student that some students may not be able to cope with without some feelings of self-dissatisfaction. An environment with many opportunities and challenges may serve well the narcissistic needs of those well equipped to take advantage of the situation, but may leave others less well equipped with feelings of self-dissatisfaction or inadequacy. It appears that no school environment can be an unalloyed blessing.

However, as the old saying goes, things could certainly be worse. And things certainly are worse in those high school settings where the opposite of the achievement-oriented, school spirit-school activities syndrome exists. For it is in those schools characterized by Aggression and by environmental deficit with respect to press for Achievement, Affiliation, Exhibitionism, Narcissism, and Play that students most often report that the only reason they are staying in school "...is that a high school diploma is supposed to be important for getting a job" (question 14). One wonders whether a conscious attempt to reverse the press in these schools might not result in a school setting productive of more positive kinds of motivation. Perhaps this

## Table 20

## Correlations between Student Body Endorsement of Contentment Indices and School Means for the HSCI Scales

| HSCI Scale | Question* | | | | | | |
|---|---|---|---|---|---|---|---|
| | 1 | 10 | 11 | 13 | 14 | 15 | 16 |
| 1. Abasement-Assurance | -70 | 01 | 21 | 06 | 09 | -50 | -21 |
| 2. Achievement | 36 | 75 | 22 | 10 | -81 | 23 | -53 |
| 3. Adaptability-Defensiveness | -07 | 68 | 31 | 38 | -56 | -04 | -38 |
| 4. Affiliation-Rejection | 38 | 72 | 10 | 04 | -79 | 22 | -42 |
| 5. Aggression-Blame Avoidance | -47 | -63 | 24 | 18 | 73 | -31 | 14 |
| 6. Change-Sameness | 47 | 26 | -08 | 28 | -12 | 33 | -09 |
| 7. Conjunctivity-Disjunctivity | 66 | 45 | -14 | -11 | -51 | 47 | -05 |
| 8. Counteraction-Inferiority Avoidance | 52 | 30 | 12 | -12 | -51 | 57 | -12 |
| 9. Deference-Restiveness | 17 | 32 | -18 | 24 | 14 | 10 | 37 |
| 10. Dominance-Tolerance | -77 | 22 | 58 | 27 | 24 | -51 | -07 |
| 11. Ego Achievement | 71 | 20 | -29 | -35 | -35 | 65 | -05 |
| 12. Emotionality-Placidity | 58 | 51 | -37 | -17 | -38 | 43 | 18 |
| 13. Energy-Passivity | 79 | 41 | -36 | -25 | -53 | 61 | 05 |
| 14. Exhibitionism-Inferiority Avoidance | 52 | 64 | 14 | 07 | -74 | 40 | -41 |
| 15. Fantasied Achievement | 15 | -49 | 05 | -22 | 00 | 16 | -38 |
| 16. Harm Avoidance-Risktaking | 65 | 06 | -49 | -23 | 00 | 63 | 38 |
| 17. Humanities, Social Science | 29 | 41 | 37 | 29 | -36 | 25 | -48 |
| 18. Impulsiveness-Deliberation | -47 | -37 | 42 | 01 | 26 | -34 | -23 |
| 19. Narcissism | 14 | 93 | 20 | 03 | -68 | 09 | -21 |
| 20. Nurturance-Rejection | 51 | 49 | -31 | -01 | -41 | 31 | 08 |
| 21. Objectivity-Projectivity | 73 | 11 | -24 | -03 | -24 | 52 | 13 |
| 22. Order-Disorder | 47 | 58 | -32 | -14 | -47 | 33 | 06 |
| 23. Play-Work | 16 | 72 | 19 | 02 | -70 | -01 | -31 |
| 24. Practicalness-Impracticalness | 74 | -44 | -86 | -69 | 27 | 70 | 71 |
| 25. Reflectiveness | 23 | 56 | 19 | 18 | -22 | 14 | -10 |
| 26. Science | 81 | 09 | -33 | -25 | -36 | 61 | -09 |
| 27. Sensuality-Puritanism | 12 | 56 | -03 | 15 | -24 | -17 | 19 |
| 28. Sexuality-Prudishness | -66 | 21 | 62 | 35 | 35 | -48 | -11 |
| 29. Supplication-Autonomy | 77 | 35 | -30 | -11 | -42 | 60 | 10 |
| 30. Understanding | 67 | 31 | -38 | -25 | -26 | 55 | 10 |

*See Appendix C for the items associated with these question numbers.

is unfair, since the school environment is in part dictated by the nature of the students coming into it, and influences from many sources interact in complex ways. Perhaps this is the most positive kind of motivation (or self-fulfillment) that you are going to get from certain kinds of student populations. But one may still conjecture.

The evidence that has been presented relevant to question 8 suggests that there are certain environmental press variables that are significantly related to student contentment, and that some environmental press seem to have implications for student self-acceptance as well.

## Question 9

The ninth question of the research penetrated into an area with fascinating challenges and complex problems; it was concerned with what might be described as a need-press "goodness of fit" between an individual's need pattern and the press pattern of the school environment in which he finds himself. What implications might this "goodness of fit" have for the individual's need satisfactions and his general satisfaction with his high school environment? Specifically, this question raised the issue:

Are students whose need patterns are not congruent with the environmental characteristics of their high school more likely to be discontented with their high school experiences?

To secure evidence bearing on this question all SAI scale scores for the entire population of students, without regard for school, were converted into standard score form. The same operation was carried out for all HSCI scale scores. For every individual each SAI standard score was then subtracted from its parallel HSCI standard score, and a "total difference score" was computed for that individual by summing the 30 differences without regard for sign. These "total difference scores" were then correlated within each school with several questions in the student questionnaire related to satisfaction with high school experiences. These correlations are shown in Table 21. (The related questions can be seen in Appendix C.).

Inspection of Table 21 reveals that the magnitude of the total discrepancy between need pattern and environmental press pattern does seem to be significantly related to satisfaction

### Table 21

### Correlations between HSCI-SAI Total Difference Score and Questions from the Student Questionnaire[1]

| Question | School |  |  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| Question 1 | -05 | 18** | 19* | 04 | 07 | 19 | -04 | 19* | 22* | 20* | 07 |
| " 10 | 02 | -11 | -18* | 00 | -17 | 00 | 11 | 02 | 09 | -02 | 00 |
| " 11 | -07 | -09 | -11 | -02 | -16 | -19 | -02 | -04 | 03 | -17 | -04 |
| " 12 | 09 | 04 | 03 | 00 | -01 | 05 | 08 | 13 | -09 | 03 | 02 |
| " 13 | -09 | -09 | -22** | -15* | -27** | -28** | -08 | 23** | -23* | -05 | -05 |
| " 14 | 08 | -07 | 00 | 12 | -03 | 26** | 01 | -07 | 02 | -01 | -11* |
| " 15 | 03 | 16* | 02 | -04 | 15 | 17 | -05 | 22** | 15 | 14 | 09 |
| " 16 | 26** | 02 | 01 | 10 | -02 | 21* | 18* | 16* | 06 | 10 | 09 |
| " 17 | -03 | -24** | -21** | -08 | -24* | -25** | -08 | -05 | -18 | -13 | -10 |
| Socioeconomic Status | 04 | -05 | -03 | -12 | -11 | -19 | -10 | 01 | -13 | -03 | -03 |
| DAT | 06 | 04 | -02 | 08 | 00 | 29** | 22* | -01 | 21* | 11 | 06 |

* Significant at .05 level.

** Significant at .01 level.

[1] Note.-The signs of the correlations reflect the values assigned to each response on the Likert-type scales. See Appendix C for the questions and the values assigned to each response alternative.

with high school environment and experiences. Particularly is this true with respect to questions 1, 13, and 17. The student who feels that he would be better off "...at some other high school rather than this one" (question 13) is likely to exhibit a significantly higher need-press discrepancy at schools 3, 4, 5, 6, 8, and 9. If one's need pattern is not congruent with the prevailing press, it does seem to lead to discontentment. In another environmental press situation the same need pattern might be much more congruent with prevailing press, and the associated discontentment would presumably be absent. Such findings lead one to conjecture about how many students are adventitious misfits by virtue of having a particular pattern of needs in an environment with little or limited potential for facilitating their satisfaction. Particularly disconcerting in this context is the fact that there is a significant tendency for the higher DAT scores to be associated with greater need-press discrepancies in three of the schools (schools 6, 7, and 9).

To help interpret these findings still further, an additional analysis was conducted with question 13. For every individual each SAI standard score was subtracted algebraically from its parallel HSCI standard score, and the discrepancies thus computed were correlated with the values assigned to the alternatives of question 13. This was again a within-schools correlation. Results are shown in Table 22. The magnitude of the correlation coefficient required at the .05 and .01 levels is indicated at the bottom of the table for each school. (Total N's were somewhat reduced due to the necessity of having three complete and usable answer forms for each case included.)

The data in Table 22 suggest that there are many more significant relationships between need-press discrepancy and question 13 than would be expected on a chance basis alone, and that the number of these relationships is greater for some scale combinations than others and for some schools than others. The nature of the correlational pattern is apparently a function of the interaction between the unique pattern of needs brought to the school by members of the student body and the particular environmental press they encounter in the school setting. The direction of these relationships is also made clear by the table. When the direction of scoring for question 13 is taken into account, it is evident that when a particular press is relatively higher than the associated need, the subject tends to disagree that he would be better off at some other high school; but when a particular need is relatively higher than the related press, the subject tends to agree that he would be better off at another high

## Table 22

### Correlations between Difference Scores for Corresponding HSCI-SAI Scales and Question 13 of the Student Questionnaire

| HSCI-SAI Scale | School | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 1. Abasement-Assurance | 00 | -11 | -12 | -11 | -21 | -28 | -12 | -16 | -21 | -14 | -27 |
| 2. Achievement | 08 | 13 | 11 | 12 | 16 | 31 | 08 | -03 | 06 | 13 | -09 |
| 3. Adaptability-Defensiveness | -08 | -08 | -03 | -11 | -07 | -02 | 04 | 12 | -14 | -17 | -19 |
| 4. Affiliation-Rejection | -07 | 07 | 35 | 10 | 22 | 25 | 08 | 05 | 19 | 08 | 14 |
| 5. Aggression-Blame Avoidance | -12 | 00 | 04 | -10 | -22 | -15 | -17 | -06 | 09 | -08 | 09 |
| 6. Change-Sameness | 09 | 10 | 09 | 17 | 33 | 19 | 04 | 06 | 22 | 14 | 07 |
| 7. Conjunctivity-Disjunctivity | 01 | 16 | 14 | 21 | 07 | -02 | 08 | 00 | -06 | 06 | 06 |
| 8. Counteraction-Inferiority Avoidance | 17 | 09 | 09 | 08 | 10 | 13 | 04 | 07 | 05 | 17 | -06 |
| 9. Deference-Restiveness | -06 | -02 | -13 | 02 | 11 | 02 | -18 | 07 | -10 | -10 | -10 |
| 10. Dominance-Tolerance | -24 | 08 | 16 | -03 | -08 | 00 | -21 | -20 | -06 | -26 | -24 |
| 11. Ego Achievement | -06 | 14 | 15 | 14 | 26 | 13 | 07 | 10 | 15 | 11 | 08 |
| 12. Emotionality-Placidity | -03 | 12 | 07 | 21 | 00 | 10 | -03 | 14 | 08 | 25 | 17 |
| 13. Energy-Passivity | 12 | 21 | 03 | 12 | 24 | 41 | 11 | 23 | 24 | 29 | 13 |
| 14. Exhibitionism-Inferiority Avoidance | -07 | 18 | 09 | 14 | 14 | 20 | -01 | 12 | 16 | 03 | 07 |
| 15. Fantasied Achievement | -02 | 03 | 09 | 06 | -02 | 12 | -21 | -07 | 17 | 00 | 01 |
| 16. Harm Avoidance-Risktaking | -07 | -07 | -14 | 02 | 13 | -11 | 06 | 21 | -10 | 05 | 20 |
| 17. Humanities, Social Science | -03 | 11 | 15 | 21 | 32 | 27 | 06 | 08 | 02 | 25 | 09 |
| 18. Impulsiveness-Deliberation | -18 | 01 | 09 | 01 | -16 | 17 | -15 | 10 | 07 | 27 | 15 |
| 19. Narcissism | 14 | 06 | 08 | 21 | 18 | 39 | 01 | 12 | 31 | 05 | 09 |
| 20. Nurturance-Rejection | 03 | 04 | 07 | 19 | 32 | 25 | -01 | 25 | 06 | 13 | 07 |
| 21. Objectivity-Projectivity | -04 | 14 | 09 | 17 | 04 | 18 | 22 | 29 | 09 | 13 | 13 |
| 22. Order-Disorder | 11 | 08 | -01 | 12 | 00 | 02 | -07 | 14 | -02 | -03 | -11 |
| 23. Play-Work | 03 | 08 | 05 | 10 | 05 | 13 | 25 | 13 | 29 | 13 | 28 |
| 24. Practicalness-Impracticalness | -09 | 11 | 04 | 03 | 22 | 15 | -09 | -02 | 11 | -05 | -16 |
| 25. Reflectiveness | 02 | 20 | 13 | 23 | 19 | 33 | -01 | 09 | 22 | 20 | 11 |
| 26. Science | -07 | 14 | 07 | 17 | 30 | 20 | 05 | 11 | 03 | 10 | 08 |
| 27. Sensuality | 10 | 13 | 10 | 09 | 13 | 21 | 01 | 18 | 18 | 15 | 04 |
| 28. Sexuality-Prudishness | 07 | -07 | 21 | 09 | -10 | 03 | -14 | -08 | 11 | 02 | 07 |
| 29. Supplication | 10 | 08 | 10 | 15 | 13 | 02 | 03 | 06 | 02 | 09 | 13 |
| 30. Understanding | -15 | 23 | 02 | 17 | 27 | 24 | 14 | 03 | 21 | 26 | 10 |
| p = .05 | 17 | 14 | 16 | 14 | 20 | 20 | 17 | 16 | 20 | 20 | 11 |
| p = .01 | 23 | 18 | 21 | 18 | 25 | 25 | 23 | 21 | 25 | 25 | 15 |

school. This generalization holds true in all cases where the characteristic or scale is positive or socially desirable; where the opposite is true, the opposite relationship seems to hold true. Consider the example of the variable "Understanding" for schools 2, 4, 5, 6, 9, and 10. When the press for Understanding is relatively greater than the need, the subject tends to disagree with the attitude expressed in question 13; when the need for Understanding is relatively greater than the corresponding press, the subject tends to agree that he would be better off at another high school. It is probably the latter situation, when the need is relatively greater than the press, that is the most important determinant of the relationships observed in Tables 21 and 22. Some support for this interpretation comes from the results of question 16 in Table 21. There it can be observed that for at least four schools those students who have the highest total discrepancy scores tend to disagree with the statement, i.e., they tend to have higher aspirations than those expressed in the statement, which suggests that they have stronger needs which might well exceed the corresponding environmental press of the situation in which they find themselves. It would seem that it is the student with the highest aspirations or strongest needs in an environmental situation perceived as relatively nonsupportive who is most likely to be discontented. Where the needs in question are socially desirable ones, it is apparent that this state of affairs could encompass many unsatisfactory situations where discouragement and nonfulfillment of potentiality were characteristic.

These interpretations are necessarily tentative and must be supported by much additional research. In our earlier discussion of data relevant to question 3 of the research it was pointed out that many of the need-press relationships that are operationally defined by the two Stern instruments seemed to be open to question in terms of their psychodynamic defensibility. This holds true, of course, for the present analysis as well. Yet the concept of need-press relationships in general and their intra-individual relationships in particular seems to be pregnant with fascinating challenges for research, and the data presented here are revealing and suggestive. Additional refinement of instrumentation should be undertaken, and then further research along these lines should be pursued with much vigor.

In summary, the evidence that has been presented relevant to question 9 suggests that intra-individual discrepancies between student need patterns and school environmental press are significantly related to discontentment with high school, and that the direction of the relationship is such that the discontentment is greater when the interest or need is relatively greater than the corresponding press or support for it.

# DISCUSSION

The nature of the research undertaken here seemed to suggest the advisability of grouping the results under nine separate but related questions that were related in turn to the five objectives of the research. Because such a wealth of data was reported for each question, it also seemed desirable to provide analytical and interpretive comment in the immediate context of each question. Therfore, much of the "discussion" appropriate to each question has already been provided. There are, however, some additional comments of a more general nature that certainly should be made before the close of the report.

It has been emphasized from the very beginning of this report that this research is in the nature of a pilot project representing one of the first attempts to analyze and compare high school learning environments and their impact on students. We cannot defend the present sample of 11 high schools as necessarily representative of the population of U. S. high schools as a whole, although an attempt was made to include some representation of the wide variety of high schools that might be found in the urbanized centers of the nation. The sample that we do have, however, permits us to state with some degree of certitude and conviction that there are statistically and psychologically significant differences in high school environments, that these differences are related to student contentment, values, and aspirations and seem to have a demonstrable effect on student decisions about the future, and that there is therefore considerable justification for encouraging researchers to conduct more and even broader-scale investigations of high school environments in the future. Although research on college environments is little more than a decade old, there is nevertheless a fairly sizable body of research literature developing in this area (11). This literature reveals again and again that there are significant differences in college environments and that these differences do influence student decisions and the course of student lives. Now that there is the strong suggestion from the present research that the differences and the influence are probably just as great at the high school level, we must consider the issue of whether the psychological stakes are not as high or higher for environmental research at the high school level as for the college level. Since there is rather strong evidence from the present research that the high school environment may be a strong determinant of whether the student ever gets to college in the first place, the issue assumes immense practical as well as theoretical importance, and perhaps an importance even prior to that for research at the college level. It seems clear that if there are students of college potential who do not fulfill that potential due partly to inadequacies in the high school environment, there needs to be much more research on the variables underlying these inadequacies and the steps that need to be taken to correct them.

Further research in this area will also need to pay increased attention to refinement of instrumentation. Most of the work done in this area has been focussed entirely on the college level, and there is rather little justification for assuming that validity and reliability indices and factorial structure will be necessarily the same for the high school level editions of instruments originally intended for college students. In the case of the instruments employed in the present research, issues need to be raised concerning the face validity, psychological defensibility, and/or factorial unity of the scale scores and factor scores of the HSCI and the SAI with a high school population. The psychological meanings of the relationships between the parallel scores of the HSCI and SAI will have to be investigated in some detail, and ultimately we will have to have evidence on the reliability and construct validity of any difference scores that might be computed between parallel scores. Yet in spite of these questions and issues, it can be seen from the present results that the instruments do in fact yield interesting and useful insights. Knowledge of this should provide a spur for increased effort directed at further refinement.

A comment should also be made about the possible limitation imposed by a small sample of schools on the generalizability of results. There is no question that the generalizations emerging from this research should be further tested with larger samples of schools, and this has been urged above and frequently throughout the report. Perhaps the most important function of a pilot project is to determine whether further analysis with larger samples seems justified. But although the sample of schools may be limited, it should be pointed out that the total student N in this research is quite substantial, being just short of 3,000 students, with an average of over 250 students per school. The latter figure is greater than that generally reported for most college analyses. The correlations that are computed between school means for such a sample should be quite stable, being "corrected" in a sense for attenuation and for the influence of confounding and interacting variables by virtue of the large number of students representing each "score" or mean. But it must nevertheless be acknowledged that a different choice of 11 schools might change these correlations somewhat, and so the generalizability of these results certainly does depend upon the similarity of the present sample to the population of schools to which we wish to generalize the results. In the future we need only to recognize this fact in our initial attempts at application, and then conduct additional investigations on large and varied samples of schools; in time we should have a clear conception of what limits there are to the generalizability of the results presented here.

## CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

The conclusions reached as a result of the research reported here are best presented as a re-listing of the conclusions that were presented under each of the nine questions that guided the conduct of the research. These conclusions were:

1. There are many statistically significant differences between the 11 high schools studied with respect to the environmental "press" scores of the High School Characteristics Index. In fact, differences among high schools were significant at the .001 level for all scale scores and all factor scores of the instrument. The highest "F" values for the many analyses of variance that were conducted on the scale scores were for the variables of Aggression, Affiliation, Nurturance, Energy, Achievement, and Exhibitionism. The highest "F" value for the factor scores was for "Group Life." There was ample evidence that the various school environments could be accurately and insightfully characterized in terms of the HSCI variables that differentiated them. Differences in student body responses to individual items of these scales provided additional interpretive insights.

2. There are many statistically significant differences between the 11 high schools studied with respect to the "need" scores of the Stern Activities Index. There is evidence, however, that these differences are apparently not as great as differences among high school environments. The highest "F" values for the scale scores were for the variables Harm Avoidance, Objectivity, Order, Emotionality, and Practicalness. Differences in student body responses to individual items of these scales were again utilized to provide additional interpretive insights. Despite the fact that SAI differences were not as great as those for school environments, the various SAI scores still provided a useful means for characterizing the need patterns of the various student bodies and the differences between them.

3. There are distinctive differences between the 11 high schools studied with respect to the relative degree of congruence between student body need pattern and environmental press pattern, suggesting that some school environments are poorly attuned to the needs of the students attending. Because of the greater variability of school means for the HSCI, these differences in congruence were more reflective of differences in the HSCI than the SAI. Some of the differences were of questionable psychological value, but many others provided useful insights. Variables associated with notable need-press incongruence for some schools were those of Reflectiveness, Understanding, Objectivity, and Order.

4. There are significant differences in the "intellectual climates" of the 11 high schools studied as that variable is defined operationally by the two "Intellectual Climate" scores of the HSCI. There are also significant differences between high schools for the "Intellectual Interests" and "Intellectual Orientation" scores of the SAI. Again the latter differences do not appear to be as great as the former. As a result of these differences there are also distinctive inter-school differences in the relative degree of congruence between the intellectual climate of a given high school and the intellectual interests or intellectual orientation of its student body. For some schools the "fit" is better than for others.

5. Schools with a strong press for achievement and schools with a weak press for achievement can be differentiated in terms of many other environmental variables as well. Press for Achievement seems to be associated with a cluster of variables which together define a condition of strong school spirit or morale, e.g.: many opportunities for participation in school activities that bring need satisfaction and social visibility, high student energy, a lack of aggressive factors in the environment, etc. Serving to illustrate this cluster are

the variables associated with the most significant differences between means for school groupings characterized by high and low press for Achievement: Affiliation, lack of Aggression, Exhibitionism, Energy, Play, Nurturance, Group Life, and Self Expression. Student bodies from these two groups are distinguishable in terms of the SAI scores of need for Achievement, Self-Assertion, Intellectual Interests, Motivation, and Intellectual Orientation.

6. Aspiration for college training is significantly related to press for Achievement in the sample of 11 schools studied, and continues to be significant after the influence of socioeconomic status and scholastic aptitude are partialed out. Thus the press for Achievement has more than temporary consequences alone; it apparently influences some important decisions the student must make about his future education. Although the press for Achievement has the highest relationship to educational aspiration, the schools with students of high educational aspiration are also high in press for Affiliation, Exhibitionism, and Play and in the SAI "need" variables of Dominance and Impulsiveness (spontaneity).

7. There are distinctive differences in the value orientations of the 11 student bodies represented in the study, and these differences are significantly related to many of the HSCI scales. Students in schools characterized by the school spirit-school activities syndrome noted in (5) above tend also to value more highly than others the role and position of a "leader in activities" in the school setting. The "leader in activities" value preference is significantly related to press for Achievement, but when the influence of socioeconomic status and DAT are partialed out, the correlation is reduced to statistical insignificance. Thus the influence of press for Achievement on values is not statistically separable from the effects of these two confounding variables in the same way that it is for educational aspiration; the "leader in activities" value preference,

the press for Achievement, and all the other variables that combine to form the school spirit-school activities syndrome are the complex resultant of interacting forces emanating from home, school, peer group, and the subject himself.

8. Student contentment with their high school environment is correlated with many HSCI scales, including Ego Achievement, Energy, Harm Avoidance, Science, Supplication, and others. Schools that rank high with respect to the school spirit-school activities syndrome mentioned in (5) and (7) above also tend to rank high in the proportion of students who report some degree of self-dissatisfaction. Apparently an environment with opportunities necessarily provides opportunities to fail, and those less well equipped to meet the challenges may develop some feelings of self-dissatisfaction or inadequacy. Those students in schools where the very opposite of the school spirit-school activities syndrome prevails, however, are more likely than others to report that the only reason they are staying in school is that a "...high school diploma is supposed to be important for getting a job."

9. Intra-individual discrepancies between student need patterns and school environmental press are significantly related to discontentment with high school, suggesting that some students might be better off at other high schools with patterns of environmental press more congruent with their particular need pattern. The direction of the relationship is such that the discontentment is greater when the interest or need is relatively greater than the corresponding press or support for it. There is also a significant relationship between need-press discrepancy and scholastic aptitude, which reflects the unfortunate circumstance that it is often the students of higher scholastic aptitude who perceive the least environmental support for their particular pattern of needs.

Because the body of findings for this research is quite encompassing, there are many implications that could be suggested and many recommendations made. Among the most important implications, perhaps, would be the following:

1. There is a clear indication from the present results, at least from the author's standpoint, that research on high school environments is both worthwhile and important. We need to concentrate more on the high school level than we do, and conduct much more research at that level than we have before. If, as mentioned earlier, the environmental press pattern has demonstrable influence on the choices a student will make about future education, the psychological and social stakes are high. This future research must include increasingly wider and more varied samples of high schools, and should direct proper attention to the further refinement of present instruments or the development of even better ones.

2. We need to pay much more attention than we have to the obviously vast differences that exist between high school learning environments and what these differences mean for students and student bodies with wide differences in need patterns. Evidence from the present research suggests that the degree of incongruence can be much greater than commonly recognized, and what we might call "the tyranny of the environment" may operate to influence individual lives in the school setting much more than we thought possible.

3. If a press for achievement is desirable in a high school setting, then it should be understood that any attempt to increase such press cannot be undertaken realistically without a consideration and re-evaluation of the total high school environment. It was admittedly a surprise to the present author that the press for achievement was so inextricably interwoven with what we have referred to as the "school spirit-school activities syndrome." Further replication with many other high school samples should be conducted in order to further confirm this generalization, or to make certain that it is not due to some "halo" effect.

> But there is rather strong evidence from the present research that a press for achievement is one of many bonuses to emerge from the school spirit-school activities syndrome, and that it cannot be considered alone.

As mentioned earlier, there are many recommendations that might be made as a result of the findings presented in this report. Perhaps three of major importance would be the following:

1. High school faculties and administrations need to make more systematic attempts to evaluate the high school environment and to assess its influence on students. This environment, like the larger culture that exists around us, is such an omnipresent and pervasive kind of influence that we ofttimes fail to appreciate its significance or understand its subtle features. If possible, an evaluation of student needs should also accompany the analysis of environment, and a comparison should be made of existing needs and the environmental press that either facilitate or inhibit their satisfaction.

2. Once such an evaluation has been made, it is important that high school faculties and administrations try to develop very diversified curricular and extracurricular programs that will in effect establish the different sub-environments necessary to help fulfill the different need patterns that exist in a typical urban or suburban high school. Too often high schools concentrate on providing programs for a highly visible (and often vocal) majority of students having similar need patterns (e.g., the college preparatory group) and tend to be unresponsive to the needs of those with divergent patterns of needs. Under such conditions the "tyranny of the environment" can become a very real phenomenon for a minority of students, and discontentment and even rebellion can be the unpleasant result.

3. In the midst of such efforts the school authorities must recognize that the total climate of a school, the "school spirit" if you will, can seemingly have much influence on a variety of student attitudes,

motivations, and aspirations. A strong, conscious, and deliberate effort should be made to do whatever can be done to create this school spirit. Provision for diversified curricular and extracurricular programs, with many opportunities to participate in many different kinds of activities, and with emphasis on group life and self-expression, should do much to create that school spirit.

## SUMMARY

The purpose of the present research was to analyze and compare high school learning environments and their impact on students. The primary objectives that guided the conduct of the research were:

(1) to identify and analyze significant differences in the characteristics of high school learning environments, with particular emphasis on the "intellectual climate" of those environments;

(2) to identify and analyze significant differences in the needs of the respective student bodies;

(3) to compare the various high schools studied with respect to the relative degree of intra-school congruence between student needs and environmental characteristics for encouraging and facilitating the satisfaction of those needs;

(4) to determine the relationship of differences in each of the above to student satisfaction, values, and aspirations for future education;

(5) to assess the acquired evidence relative to the possible validity and utility of the instruments employed for future analyses of environmental characteristics and student needs at the high school level.

To implement these objectives 11 schools were selected from a metropolitan area of New York State. Nine of these schools constituted all of the public high schools in a city of over 300,000 population. Included among these was a technical and industrial high school. The 10th school was a suburban school in a high status, upper-middle class community, and the 11th school was a Catholic high school drawing its students from many different parts of the metropolitan area. The subjects of the study consisted of all the seniors of the 11 high schools. The total number of subjects included in the study was 2933.

Three instruments were administered to all 11 senior classes: the High School Characteristics Index (25), the Stern Activities Index (25), and a questionnaire developed by the author that was designed to secure information about

student satisfaction and contentment with the high school environment, student values, student aspiration for future education or training, the occupational and educational status of parents, and other data. The Stern Activities Index yields 30 scores reflecting student needs, while the High School Characteristics Index yields 30 scores parallel to the Activities Index scores that reflect the various environmental "press" (13) that might either facilitate or inhibit the satisfaction of the associated need. The parallel scores feature of the two instruments make it possible to compute indices of individual or institutional need-press congruence. Responses from all three instruments were punched on IBM cards, and these cards were used as input for all subsequent scoring and statistical analyses.

A brief summary of the many results of the research would include the following:

1. There were statistically significant differences ($p = .001$) between the 11 high schools with respect to all scale scores and factor scores of the High School Characteristics Index (HSCI). The most significant differences were for the variables of Aggression, Affiliation, Nurturance, Energy, Achievement, and Exhibitionism.

2. There were many statistically significant differences between the student bodies of the 11 high schools with respect to the "need" scores of the Stern Activities Index (SAI), but these differences were not as great as for the HSCI environmental press scores. The most significant differences were for the variables of Harm Avoidance, Objectivity, Order, Emotionality, and Practicalness.

3. There are distinctive differences between the 11 high schools with respect to the relative degree of congruence between student body need pattern and environmental press pattern, suggesting that some school environments are poorly attuned to the needs of the students attending. Variables associated with notable need-press incongruence for some schools were those of Reflectiveness, Understanding, Objectivity, and Order.

4. There are significant differences in the "Intellectual Climates" of the 11 high schools studied, in the "Intellectual Interests" of their respective student bodies, and in the relative degree of congruence between these two variables.

5. Press for Achievement seems to be associated with a cluster of variables which together define a condition of strong school spirit or morale, e.g.: many opportunities for participation in school activities that bring need satisfaction and social visibility, high student energy, a lack of aggressive factors in the environment, etc. The most important HSCI variables in this cluster seem to be Affiliation, lack of Aggression, Exhibitionism, Energy, Play, Nurturance, Group Life, and Self Expression.

6. Aspiration for college training is significantly related to press for Achievement in the sample of 11 schools studied, and continues to be significant after the influence of socioeconomic status and scholastic aptitude are partialed out. Thus the press for Achievement has more than temporary consequences alone; it apparently influences some important decisions the student must make about his future education.

7. Differences in the value orientation of the 11 student bodies are significantly related to many of the HSCI scales. Students in schools characterized by the school spirit-school activities syndrome noted in (5) above tend also to value more highly than others the role and position of a "leader in activities" in the school setting.

8. Student contentment with their high school environment is correlated with several HSCI scales. Schools that rank high with respect to the school spirit-school activities syndrome mentioned in (5) and (7) above also tend to rank high in the proportion of students who report some degree of self-dissatisfaction. Those students in schools that are decidedly lacking in those qualities, however, are more likely than others to report that the only reason they are staying in school is that "...a

high school diploma is supposed to be important for getting a job."

9. Intra-individual discrepancies between student need patterns and school environmental press are significantly related to discontentment with high school. The discontentment is typically greater when the interest or need is relatively greater than the corresponding press or support for it. There is also a significant relationship between need-press discrepancy and scholastic aptitude.

Among the implications drawn from the results of the research were the following: First, there is a clear indication from the present results that research on high school environments is both worthwhile and important. The finding that educational aspirations are significantly related to press for achievement is one example of the critical importance of this type of research. We need to conduct much more research on the high school environment than we have up to the present time. Secondly, we need to pay much more practical attention than we have to the obviously vast differences that exist between high school learning environments and what these differences mean for students and student bodies with wide differences in need patterns. Thirdly, we need to recognize that desirable outcomes of environmental press do not usually appear to stem from single environmental determinants but rather from a complex of interacting factors that we have referred to as the "school spirit-school activities syndrome." Thus any attempt to obtain desirable outcomes must typically take into consideration the entire complex.

Among the many recommendations that could be made are the following: First, high school administrations and faculties need to make more systematic attempts to evaluate the high school environment and to assess its influence on students. A like attempt should be made to analyze student needs, and to compare those needs with existing environmental press. Secondly, such evaluations should be followed by an effort to develop very diversified curricular and extracurricular programs that will in effect establish the different sub-environments necessary to help fulfill the different need patterns that exist in a typical high school. Thirdly, school authorities must recognize that the total climate of a school, the "school spirit," can seemingly have much influence on a variety of student attitudes, motivations, and aspirations. A strong, conscious, and deliberate effort should be made to do whatever can be done to create this school spirit. Evidence from the present research indicates that provision for diversified curricular and extracurricular programs, with many opportunities to participate in many different kinds of activities, and with emphasis on group life and self-expression, should do much to create that school spirit.

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# APPENDIXES

## Appendix A

## High School Characteristics Index

# HIGH SCHOOL CHARACTERISTICS INDEX

## Form 960

### by George G. Stern

There are 300 statements in this booklet They are statements about high school life. They refer to the curriculum, to high school teaching and classroom activities, to rules, regulations and policies, to student organizations, activities and interests, to features of the buildings and grounds, etc. The statements may or may not be characteristic of your high school because high schools differ from one another in many ways. You are to decide which statements are characteristic of your high school and which are not. Your answers should tell us what you believe is true about your high school rather than what you might personally prefer. You won't *know* the answers to many of these statements, because there may not be any really definite information on which to base your answer. *Your response will simply mean that in your opinion the statement is probably true or probably false about your high school.*

Do not omit any item.

## DIRECTIONS

On the special answer sheet print your name, and the other information requested. Then, as you read each statement in the booklet, *blacken* space

T – when you think the statement is generally TRUE or characteristic of your high school, is something which occurs or might occur, is the way people tend to feel or act.

F – when you think the statement is generally FALSE or not characteristic of your high school, is something which is not likely to occur, is not the way people typically feel or act.

## ~~DIRECTIONS FOR USING NCS ANSWER SHEET~~

~~The rows of response circles are numbered to correspond to the items in the Test Booklet. Each question may be answered either Ⓣ or Ⓕ.~~

~~In marking your answers on the Answer Sheet, make sure that the number of the Statement is the same as the number on the Answer Sheet. Be sure to answer either Ⓣ or Ⓕ for every Statement.~~

- ~~Be sure to use a No. 2½ or softer writing pencil.~~
- ~~Do Not Use Ball Point or Ink.~~
- ~~Keep your Answer Sheet Clean.~~
- ~~Do not make stray marks.~~
- ~~Erase errors completely.~~
- ~~Fill the circle completely.~~

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**Legend: T — True.** Generally true or characteristic of your high school, is something which occurs or might occur, is the way people tend to feel or act.

**F — False.** Generally false or not characteristic of your high school, is something which is not likely to occur, is not the way people typically feel or act.

1. Teachers are very interested in student ideas or opinions about school affairs.
2. There is a lot of competition for grades.
3. Grades are read out in class so that everybody knows who got the high and low marks.

4. There are very few clubs and student group activities to which students may belong.
5. School property is seldom damaged by students.
6. The students here come from many different kinds of homes.

7. Most classes are very well planned.
8. Teachers often try to get students to speak up freely and openly in class.
9. Teachers go out of their way to make sure that students address them with due respect.

10. There is a recognized group of student leaders at this school.
11. Most teachers are not very interested in what goes on in the local government of the community.
12. Students here learn that they are not only expected to have ideas but to do something about them.

13. Classroom discussions are often very exciting, with a lot of active student participation.
14. Competition is keen for parts in student plays.
15. In English classes, students are encouraged to be imaginative when they write.

16. A great many students are involved in intramural sports and other athletic activities.
17. Many teachers and students are concerned with literary, musical, artistic, or dramatic activities outside the classroom.
18. In most classes there is very little joking and laughing.

19. Formal dances are seldom held here.
20. Many of the upperclassmen help new students get used to school life.
21. No one needs to be afraid of expressing a point of view that is unusual or not popular in this school.

22. Students seldom change places during class.
23. Students really get excited at an athletic contest.
24. It's important here to be a member of the right club or group.

25. Many students are interested in books and movies dealing with psychological problems.

26. The school library is very well supplied with books and magazines on science.
27. Students sometimes get a chance to hear music in the lunchroom or during other free periods.
28. There is lots of dating among students during the week—at the soda fountain, movies, lunch hours, etc.

29. Teachers here are genuinely concerned with student's feelings.
30. There is a lot of emphasis on preparing for college.
31. You need permission to do *anything* around here.

32. Students generally manage to pass even if they don't work hard during the year.
33. In gym class, everyone has to do the same exercises, no matter how good or bad they are at it.
34. There is a lot of school spirit.

35. In this school, very few students walk around with a chip on the shoulder.
36. Courses, assignments, tests and texts frequently change from year to year.
37. Teachers clearly explain what students can get out of their classes and why it is important.

38. When students think a teacher's decision is unfair, they try to get it changed.
39. Most students look up to their teachers and admire them.
40. Student elections produce a lot of interest and strong feeling.

41. Daily newspapers are seldom read.
42. The teachers are seldom calm and even-tempered, when disciplining students.
43. Students put a lot of energy into everything they do – in class and out.

44. When students do a project or put on a show, everybody knows about it.
45. What one wants to do or be later in life is a favorite topic around here.
46. Club initiations and class rivalries sometimes get a little rough.

47. This school offers many opportunities for students to get to know important works of art, music, and drama.
48. Students are always coming up with new fads and expressions.
49. Students take a great deal of pride in their personal appearance.

50. There are collections for the needy at Christmas or other times.

**Legend: T — True.** Generally true or characteristic of your high school, is something which occurs or might occur, is the way people tend to feel or act.

**F — False.** Generally false or not characteristic of your high school, is something which is not likely to occur, is not the way people typically feel or act.

51. Everyone has the same opportunity to get good marks because the tests are marked very fairly.
52. Many teachers get very upset if students happen to report to class a little late.
53. There is a lot of student enthusiasm and support for the big school events.
54. Students try hard to be good in sports, as a way to gain recognition.
55. Many students enjoy reading and talking about science fiction.
56. When students get together they seldom talk about scientific topics.
57. There is practically no one here who would feel comfortable participating in modern dance or ballet.
58. Boys and girls seldom sit at separate tables in the school cafeteria.
59. Outside of class most teachers are friendly and find time to chat with students.
60. Quite frequently students will get together in their own time and talk about things they have learned in class.
61. Students are seldom kept waiting when the office sends for them.
62. Most teachers give a lot of home work.
63. Once you've made a mistake, it's hard to live it down in this school.
64. It is easy to make friends in this school because of the many things that are going on that anyone can participate in.
65. Most students can easily keep out of trouble, in this school.
66. Many students have lived in different parts of the state, states, or other countries.
67. A lot of students who get just passing grades at midterm really make an effort to earn a higher grade by the end of the term.
68. Pupils are often expected to work at home on problems which they could not solve in class.
69. Students rarely express opinions different from the teacher's.
70. Students are expected to report any violation of rules and regulations to their teacher or the principal.
71. There are some pretty strong feelings expressed here about political parties and elections.
72. The way people feel around here is always fairly evident.
73. Few students here would ever work or play to the point of being completely worn out.
74. Teachers provide opportunities for students to develop their skills and talents directing the work of others.
75. Teachers here warn students to be down to earth in planning for their future, and discourage daydreaming about adventure and making a lot of money.
76. Fire drills and civil defense drills are held regularly.
77. Few students would be interested in an educational film about writers and poets.
78. Students frequently do things on the spur of the moment.
79. Looking and acting "right" is very important to teachers and students here.
80. Students seldom send their teachers cards or little gifts on special occasions.
81. The principal and teachers are usually understanding if a student does something wrong and will give him the benefit of the doubt.
82. Many teachers require students to recopy notes or papers to make them neat.
83. There are lots of dances, parties, and other social activities.
84. This school offers very few really practical courses.
85. Teachers here like students to use a lot of imagination when they write compositions, and give good marks to those who do.
86. Few students would be interested in hearing a talk by a famous scientist.
87. Few student lockers are decorated with pictures, pennants, etc.
88. Many students here really enjoy dancing.
89. The person who is always trying to "help out" is likely to be regarded as a nuisance.
90. Assemblies or discussions on serious subjects are not held very often here.
91. The teachers very often make you feel like a child.
92. Popularity, pull and bluff get students through many courses.
93. Students are usually made to answer to the principal of the school as well as the teacher when they have done something wrong.
94. Few students stay around after school for different activities or sports.
95. The desks are all cut up from doodling with knives and pencils.
96. This school has the same activities each year.
97. Activities in most student organizations are carefully and clearly planned.
98. Students don't hesitate to voice their complaints around here.
99. Students almost always wait to be called on before speaking in class.
100. There are several cliques and groups, and if you're not in one you're pretty much on your own.

**Legend: T — True.** Generally true or characteristic of your high school, is something which occurs or might occur, is the way people tend to feel or act.

**F — False.** Generally false or not characteristic of your high school, is something which is not likely to occur, is not the way people typically feel or act.

101 Boy-girl relationships here are simple and rarely become really romantically involved.
102. Students can get into very heated arguments with one another, and be the best of friends the next day.
103. There are so many things to do here that students are busy all the time.
104. Most students here would not like to dress up for a dance or costume party.
105. Most students are more concerned with the present than the future.
106. Many students here drive cars.
107. Students seldom read books which deal with political and social issues.
108. Teachers insist that much time be spent in planning activities before doing them.
109. Most students here enjoy such activities as dancing, skating, diving, and gymnastics.
110. Students often run errands or do other personal services for the principal and teachers.
111. Students are sometimes punished without knowing the reason for it.
112. At this school the motto seems to be "a place for everything and everything in its place".
113. Having a good time comes first with most students here.
114. No-one here has much interest in history, music, and other such impractical courses.
115. There is little interest in modern art and music.
116. Few students are planning careers in science.
117. Little effort is made in the cafeteria to serve lunches that are tasteful and appealing to the eye.
118. Students here spend a lot of time talking about their boy-friends or girl-friends.
119. Students here are encouraged to be on their own and to make up their own minds.
120. A lot of students like checkers, chess, puzzles, crossword puzzles, and other such games.
121. Students are made to take the blame for things whether they did them or not.
122. Few students try hard to get on the honor roll.
123. Students have to get up in front of the class to recite no matter how embarrassed they might be.
124. There are many parties or dances sponsored by the school.
125. Lots of kids rip out pages and mark up their school books.
126. New ideas are always being tried out here.
127. Assignments are usually clear so everyone knows what to do.
128. When students do not like a school rule, they really work to get it changed.
129. Teachers refer to other teachers by their first names in the presence of students.
130. Student leaders at this school expect you to go along with what they say.
131. There is no really active current events club in this school.
132. Most students respond to ideas and events in a pretty cool and mild-mannered way.
133. Teachers here have little interest in what they are doing.
134. Students in this school like to draw attention to themselves.
135. Going to school here tends to make students more practical and realistic.
136. The school nurse is very active in trying to prevent illness by frequent check-ups, making sure everyone has had vaccinations, etc.
137. Student groups seldom meet to discuss current social problems and issues.
138. Students often start things without thinking about how they will develop or where they may end.
139. Students who are not neatly dressed are likely to have this called to their attention.
140. There is a lot of interest here in projects for collecting packages of food or clothing to help out others.
141. If a student thinks out a report carefully teachers will give him a good mark, even if they don't agree with him.
142. Most teachers in this school like to have their boards cleaned off after each lesson.
143. New jokes and funny stories get around the school in a hurry.
144. Students may not talk about how much money a family has or what they do for a living, but everyone knows who's who.
145. Although many students may attend church here, there is little real interest in the basic meaning of religion.
146. This school has very good science teachers.
147. Most of the teachers here try to decorate their classrooms so that the students will find them more pleasant to be in.
148. Boys and girls often get together between classes, during lunch hour, etc.
149. Most teachers prefer that students work out their own problems.
150. School spirit seems to be more important than learning at this school.

**Legend: T — True.** Generally true or characteristic of your high school, is something which occurs or might occur, is the way people tend to feel or act.

**F — False.** Generally false or not characteristic of your high school, is something which is not likely to occur, is not the way people typically feel or act.

151. Teachers seldom make you feel you're wasting their time in the classroom.
152. Examinations here really test how much a student has learned.
153. When a student fails a test, he has to take a note home to his parents.
154. Students seldom get out and support the school athletic teams.
155. Student arguments often turn into fights.
156. Most students dress and act pretty much alike.
157. Classroom interruptions by the public address system, knocks at the door, etc., are infrequent in this school.
158. When the assignments really get tough, many students just won't do them.
159. Teachers seldom get annoyed when students disagree with them during classroom discussion.
160. There are no favorites at this school; everyone gets treated alike.
161. Student discussions on national and international news are encouraged in class.
162. An open display of emotion (such as crying, swearing, etc.) would embarrass most teachers.
163. Students get so wrapped up in various activities that they often lose all sense of time or of other things going on around them.
164. It is easy to obtain student speakers for activities or meetings.
165. There is little sympathy here for ambitious daydreams about the future.
166. Quite a bit of smoking and drinking goes on among students.
167. When students get together, they seldom talk about classical music or art.
168. New ideas are met with immediate enthusiasm in this school.
169. Students seldom receive compliments when they come to school with new clothing, a new haircut or hairdo, etc.
170. Students try in all sorts of ways to be friendly, especially to newcomers.
171. Some of the teachers treat questions in class as if the students were criticizing them personally.
172. The school building and grounds often look a little untidy.
173. Everyone has a lot of fun at this school.
174. Many students enjoy working with their hands and are pretty good at making or repairing things.
175. Student newspapers and magazines often carry short stories and poems by students.
176. Science labs here have very good equipment.
177. Nothing much is said to students who happen to be chewing on pencils, rubber bands, paper clips, gum, or something.
178. There are several popular spots where a crowd of boys and girls can always be found.
179. Most of the teachers are not interested in student's personal problems.
180. Teachers do little more than repeat what's in the textbook in most classes here.
181. Those in charge are not very patient with students.
182. Most students around here expect to go on to college.
183. Students are made to explain *why* they did something when the teacher doesn't like what they've done.
184. There is little interest in school clubs and social groups.
185. When students dislike a teacher, they let him know it.
186. Very few of the teachers have been here for a long time.
187. In most classes, the presentation of material is well planned and illustrated.
188. Everyone prefers the easy teachers, and tries hard to avoid the tough ones.
189. Students here frequently refer to their teachers by their first names or nicknames.
190. Knowing the right people is important in getting in on all of the activities.
191. Most students take an active part in school elections.
192. Graduation is a pretty matter-of-fact, unemotional event.
193. Teachers put a lot of energy and enthusiasm into their teaching.
194. School activities are given a lot of space in the local newspapers.
195. Many students hope to achieve future fame and/or wealth.
196. Students with bad colds or anything that's "catching" are quickly sent home so that they don't pass on what they have to others.
197. Classes in history, literature, and art are among the best liked here.
198. Students who tend to say or do the first thing that occurs to them are likely to have a hard time here.
199. Teachers insist that students come to school well-dressed and well-groomed.
200. Students really support fund drives such as the March of Dimes, Community Chest, Red Cross, CARE, etc.

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**F — False.** Generally false or not characteristic of your high school, is something which is not likely to occur, is not the way people typically feel or act.

201. There always seems to be a lot of little quarrels going on.
202. Many student lockers are messy, some even dirty.
203. It's easy to get a group together for games, going to the movies, etc., after school.
204. Most students and their families think of education as a preparation for earning a good living.
205. Teachers welcome the student's own ideas on serious matters.
206. A student who spends some of his spare time in a science lab is likely to be regarded as a little odd.
207. A lot has been done with pictures, draperies, colors, and decoration to make the school building pleasing to the eye.
208. Most students would like to go steady.
209. One nice thing about this school is the personal interest taken in the students.
210. Most of the teachers are deeply interested in their subject-matter.
211. When you get into trouble with one teacher around here, the other teachers soon know about it.
212. In this school there are very few contests in such things as speaking, chess, essays, etc.
213. Tests are given almost every day in many classes.
214. Most students get together often in particular soda fountains or snack bars.
215. There are frequent fights in the lunchroom or on the school grounds.
216. The school is especially proud of its long history.
217. Most students follow a regular plan for study and play.
218. No one gets pushed around at this school without fighting back.
219. If students apologize for a wrong-doing, teachers are more willing to help them.
220. You have to act like all of the others in order to be in with the group.
221. Strong positions are taken here regarding civil liberties and minority groups.
222. Students here can be wildly happy one moment and hopelessly sad the next.
223. Classes are boring.
224. Most students like to "clown" around at this school.
225. Teachers encourage students to think about exciting and unusual careers.
226. Everyone here is "safety-first" conscious, making sure that nobody will get hurt.
227. Teachers frequently urge students to consider the influence of history on current events.
228. There is much shouting and yelling in the halls and cafeteria.
229. Good manners and making a good impression are important here.
230. Many of the teachers in this school are actively interested in charities and community services.
231. Teachers always seem to think students are up to something and make the worst of even small happenings.
232. Classrooms are always kept very clean and tidy.
233. Students here don't do much except go to classes, study, and then go home again.
234. Many teachers here stress the practical uses of their subjects in helping students to get a good job.
235. Long, serious discussions are common among the students.
236. Many students here make models of scientific gadgets, and enter them in local or state science fairs.
237. In this school style is more important than dressing for personal comfort.
238. Some of the most popular students have a knack for making witty comments that some people would not consider in good taste.
239. The teachers go out of their way to help you.
240. There is a lot of interest here in learning for its own sake, rather than just for grades or for graduation credits.
241. Students don't argue with the teacher, they just admit that they are wrong.
242. Pupils seldom take part in extra projects in Science, English, History, etc.
243. Everyone knows who the smart students are because they are in different classes from the others.
244. Many projects are assigned in which small groups of students work together (either in or out of school).
245. The wash rooms are always a mess because the students throw paper around.
246. Many of the teachers have lived in this community all their lives.
247. It is hard to prepare for examinations because students seldom know what they will be tested on.
248. The principal here is willing to hear student complaints.
249. Students seldom make fun of teachers or the school.
250. A lot of kids around here argue just for the sake of winning the argument.

**Legend:** **T — True.** Generally true or characteristic of your high school, is something which occurs or might occur, is the way people tend to feel or act.

**F — False.** Generally false or not characteristic of your high school, is something which is not likely to occur, is not the way people typically feel or act.

251. Both teachers and students here are actively concerned about ways to make this world a better place in which to live.
252. Students tend to hide their deeper feelings from each other.
253. Class discussions are usually vigorous and intense.
254. There is little interest here in student dramatic or musical activities.
255. For most students, future goals emphasize job security, family hapiness, and good citizenship.
256. Few students bother with rubbers, hats, or other special protection against the weather.
257. There are copies of many famous paintings in the school halls and classrooms.
258. Students frequently speak up in class without worrying about what they're going to say.
259. Teachers are always carefully dressed and neatly groomed.
260. When someone is out sick for a while his classmates let him know that he is missed.
261. If students do their work well they get a good mark, whether or not the teacher likes them.
262. Offices and rooms are clearly marked.
263. Most students take their school work very seriously.
264. Learning to work with others is emphasized in this school.
265. Students are seldom encouraged to think about developing their own personal values and a philosophy of life.
266. There are frequent science displays around the school.
267. There are no comfortable seats in this school where students can sit and relax.
268. Most of the students here start dating very young.
269. It doesn't matter who you are, at this school you are expected to be "grown up" and able to handle your own affairs.
270. Many students here would rather talk about poetry or religion, instead of the movies or sports.
271. There is a lot of apple-polishing and buttering-up of teachers around here.
272. There are awards or special honors for those who do the best work or get the best grades.
273. Teachers often ask a lot of very personal questions.
274. Open houses or carnivals are held each year and everyone has to help out with them.
275. Teachers seldom use physical punishment.
276. You never know what is going to happen next at this school.
277. Clear and usable notes are usually given by most teachers.
278. It is always very difficult to get a group of students to decide something here without a lot of argument.
279. Students can feel free to disagree with their teachers openly.
280. The student leaders here really get away with a lot.
281. The expression of strong personal belief is pretty rare around here.
282. Very few things here arouse much excitement or feeling.
283. The teachers really push each student to the limit of his ability.
284. Student parties are colorful and lively.
285. Quite a few faculty members have had varied and unusual careers.
286. Rough games and sports are an important part of intramural athletics.
287. Most students are not interested in television programs dealing with social and political problems.
288. Students frequently do things together here after school without planning for them ahead of time.
289. Students think about wearing the right clothes for different things – classes, social events, sports, and other affairs.
290. Students in this school have a reputation for being very friendly with each other.
291. Many teachers seem moody and hard to figure out.
292. Most teachers in this school prefer to march their students from place to place, instead of letting them go by themselves.
293. Every year there is a carnival, picnic, or field day.
294. Most students are interested in jobs in business, engineering, management, and other practical areas.
295. One frequently hears students talking about differences between our own way of life and that of people in other countries.
296. Some subjects in this school stress the history and importance of great inventions and inventors and how they have influenced the world today.
297. Students here enjoy opportunities to attend concerts and art exhibits on school time.
298. Nearly everyone here tries to have a date for the weekends.
299. Counseling and guidance services are really personal, patient, and extensive.
300. Clear and careful thinking are most important in getting a good mark on reports, papers, and discussions.

# Appendix B

# Stern Activities Index

3

# STERN ACTIVITIES INDEX

**George G. Stern, Syracuse University**

This booklet contains a number of brief statements describing many different kinds of activities. You will like some of these things. They will seem more pleasant than unpleasant to you, perhaps even highly enjoyable. There will be others that you will dislike, finding them more unpleasant than pleasant. The activities listed in this booklet have been obtained from a great many different persons. People differ in the kinds of things they enjoy, like to do, or find pleasant to experience. You are to decide which of these you like and which you dislike.

## DIRECTIONS

Print the information called for at the top of the special answer sheet: your name, the date, your age and sex, etc. Then, as you read each item, *blacken* space

L — if the item describes an activity or event that you would like, enjoy, or find more pleasant than unpleasant.

D — if the item describes an activity or event that you would dislike, reject, or find more unpleasant than pleasant.

### ~~DIRECTIONS FOR USING NCS ANSWER SHEET~~

~~The rows of response circles are numbered to correspond to the items in the Test Booklet. Each question may be answered either Ⓛ or Ⓓ.~~

~~In marking your answers on the Answer Sheet, make sure that the number of the Statement is the same as the number on the Answer Sheet. Be sure to answer either Ⓛ or Ⓓ for every Statement.~~

- ~~Be sure to use a #2½ or softer writing pencil.~~
- ~~Do Not Use Ball Point or Ink.~~
- ~~Keep your Answer Sheet Clean.~~
- ~~Do not make stray marks.~~
- ~~Erase errors completely.~~
- ~~Fill the circle completely.~~

**Legend: L – if the item describes an activity or event that you would like, enjoy, or find more pleasant than unpleasant.**

**D – if the item describes an activity or event that you would dislike, reject, or find more unpleasant than pleasant.**

1. Taking the blame for something done by someone I like.
2. Setting difficult goals for myself.
3. Concealing a failure or humiliation from others.

4. Having other people let me alone.
5. Getting what is coming to me even if I have to fight for it.
6. Being quite changeable in my likes and dislikes.

7. Scheduling time for work and play during the day.
8. Working twice as hard at a problem when it looks as if I don't know the answer.
9. Seeing someone make fun of a person who deserves it.

10. Persuading a group to do something my way.
11. Being a newspaperman who crusades to improve the community.
12. Listening to music that makes me feel very sad.

13. Taking up a very active outdoor sport.
14. Keeping in the background when I'm with a group of wild, fun-loving, noisy people.
15. Toughening myself, going without an overcoat, seeing how long I can go without food or sleep, etc.

16. Diving off the tower or high board at a pool.
17. Learning about the causes of some of our social and political problems.
18. Doing something crazy occasionally, just for the fun of it.

19. Imagining what I would do if I could live my life over again.
20. Feeding a stray dog or cat.
21. Taking special precautions on Friday, the 13th.

22. Washing and polishing things like a car, silverware, or furniture.
23. Making my work go faster by thinking of the fun I can have after it's done.
24. Being good at typewriting, knitting, carpentry, or other practical skills.

25. Understanding myself better.

26. Learning how to prepare slides of plant and animal tissue, and making my own studies with a microscope.
27. Holding something very soft and warm against my skin.
28. Talking about how it feels to be in love.

29. Belonging to a close family group that expects me to bring my problems to them.
30. Concentrating intently on a problem.
31. Suffering for a good cause or for someone I love.

32. Working for someone who will accept nothing less than the best that's in me.
33. Defending myself against criticism or blame.
34. Going to the park or beach with a crowd.

35. Shocking narrow minded people by saying and doing things of which they disapprove.
36. Getting up and going to bed at the same time each day.
37. Planning a reading program for myself.

38. Returning to a task which I have previously failed.
39. Doing what most people tell me to do, to the best of my ability.
40. Having other people depend on me for ideas or opinions.

41. Being an important political figure in a time of crisis.
42. Crying at a funeral, wedding, graduation, or similar ceremony.
43. Exerting myself to the utmost for something unusually important or enjoyable.

44. Wearing clothes that will attract a lot of attention.
45. Working until I'm exhausted, to see how much I can take.
46. Being careful to wear a raincoat and rubbers when it rains.

47. Studying the music of particular composers, such as Bach, Beethoven, etc.
48. Acting impulsively just to blow off steam.
49. Thinking about ways of changing my name to make it sound striking or different.

50. Discussing with younger people what they like to do and how they feel about things.

**Legend:** **L** – if the item describes an activity or event that you would like, enjoy, or find more pleasant than unpleasant.

**D** – if the item describes an activity or event that you would dislike, reject, or find more unpleasant than pleasant.

51. Waiting for a falling star, white horse, or some other sign of success before I make an important decision.
52. Keeping my bureau drawers, desks, etc., in perfect order.
53. Spending most of my extra money on pleasure.

54. Learning how to repair such things as the radio, sewing machine, or car.
55. Thinking about different kinds of unusual behavior, like insanity, drug addition, crime, etc.
56. Studying wind conditions and changes in atmospheric pressure in order to better understand and predict the weather.

57. Eating after going to bed.
58. Watching a couple who are crazy about each other.
59. Working for someone who always tells me exactly what to do and how to do it.

60. Finding the meaning of unusual or rarely used words.
61. Being polite or humble no matter what happens.
62. Setting higher standards for myself than anyone else would, and working hard to achieve them.

63. Admitting when I'm in the wrong.
64. Leading an active social life.
65. Doing something that might provoke criticism.

66. Rearranging the furniture in the place where I live.
67. Putting off something I don't feel like doing, even though I know it has to be done.
68. Having to struggle hard for something I want.

69. Listening to a successful person tell about his experience.
70. Getting my friends to do what I want to do.
71. Taking an active part in social and political reform.

72. Avoiding excitement or emotional tension.
73. Staying up all night when I'm doing something that interests me.
74. Speaking at a club or group meeting.

75. Imagining myself president of the United States.

76. Crossing streets only at the corner and with the light.
77. Listening to TV or radio programs about political and social problems.
78. Being in a situation that requires quick decisions and action.

79. Pausing to look at myself in a mirror each time I pass one.
80. Helping to collect money for poor people.
81. Paying no attention to omens, signs, and other forms of superstition.

82. Keeping an accurate record of the money I spend.
83. Dropping out of a crowd that spends most of its time playing around or having parties.
84. Helping to direct a fund drive for the Red Cross, Community Chest, or other organizations.

85. Imagining life on other planets.
86. Reading articles which tell about new scientific developments, discoveries, or inventions.
87. Chewing on pencils, rubber bands, or paper clips.

88. Talking about who is in love with whom.
89. Being a lone wolf, free of family and friends.
90. Spending my time thinking about and discussing complex problems.

91. Trying to figure out how I was to blame after getting into an argument with someone.
92. Competing with others for a prize or goal.
93. Being ready with an excuse or explanation when criticized.

94. Meeting a lot of people.
95. Arguing with an instructor or superior.
96. Being generally consistent and unchanging in my behavior.

97. Going to a party where all the activities are planned.
98. Doing a job under pressure.
99. Going along with a decision made by a supervisor or leader rather than starting an argument.

100. Organizing groups to vote in a certain way in elections.

**Legend:** **L** – if the item describes an activity or event that you would like, enjoy, or find more pleasant than unpleasant.

**D** – if the item describes an activity or event that you would dislike, reject, or find more unpleasant than pleasant.

101. Living a life which is adventurous and dramatic.
102. Having someone for a friend who is very emotional.
103. Sleeping long hours every night in order to have lots of rest.

104. Playing music, dancing, or acting in a play before a large group.
105. Thinking about what I could do that would make me famous.
106. Riding a fast and steep roller coaster.

107. Comparing the problems and conditions of today with those of various times in the past.
108. Doing whatever I'm in the mood to do.
109. Daydreaming about what I would do if I could live my life any way I wanted.

110. Comforting someone who is feeling low.
111. Avoiding things that might bring bad luck.
112. Arranging my clothes neatly before going to bed.

113. Getting as much fun as I can out of life, even if it means sometimes neglecting more serious things.
114. Learning how to make such things as furniture or clothing myself.
115: Trying to figure out why the people I know behave the way they do.

116. Doing experiments in physics, chemistry or biology in order to test a theory.
117. Sleeping in a very soft bed.
118. Seeing love stories in the movies.

119. Having someone in the family help me out when I'm in trouble.
120. Working crossword puzzles, figuring out moves in checkers or chess, playing anagrams or scrabble, etc.
121. Admitting defeat.

122. Taking examinations.
123. Being corrected when I'm doing something the wrong way.
124. Belonging to a social club.

125. Teasing someone who is too conceited.

126. Moving to a new neighborhood or city, living in a different country, etc.
127. Finishing something I've begun, even if it is no longer enjoyable.
128. Staying away from activities which I don't do well.

129. Following directions.
130. Being able to hypnotize people.
131. Playing an active part in community affairs.

132. Going on an emotional binge.
133. Walking instead of riding whenever I can.
134. Doing something that will create a stir.

135. Thinking about winning recognition and acclaim as a brilliant military figure.
136. Standing on the roof of a tall building.
137. Studying different types of government, such as the American, English, Russian, German, etc.

138. Doing things on the spur of the moment.
139. Having lots of time to take care of my hair, hands, face, clothing, etc.
140. Having people come to me with their problems.

141. Being especially careful the rest of the day if a black cat should cross my path.
142. Recopying notes or memoranda to make them neat.
143. Finishing some work even though it means missing a party or dance.

144. Working with mechanical appliances, household equipment, tools, electrical apparatus, etc.
145. Thinking about what the end of the world might be like.
146. Studying the stars and planets and learning to identify them.

147. Listening to the rain fall on the roof, or the wind blow through the trees.
148. Flirting.
149. Knowing an older person who likes to give me guidance and direction.

150. Being a philosopher, scientist, or professor.

**Legend:** **L** – if the item describes an activity or event that you would like, enjoy, or find more pleasant than unpleasant.

**D** – if the item describes an activity or event that you would dislike, reject, or find more unpleasant than pleasant.

151. Having people laugh at my mistakes.
152. Working on tasks so difficult I can hardly do them.
153. Keeping my failures and mistakes to myself.

154. Going to parties where I'm expected to mix with the whole crowd.
155. Annoying people I don't like, just to see what they will do.
156. Leading a well-ordered life with regular hours and an established routine.

157. Planning ahead so that I know every step of a project before I get to it.
158. Avoiding something at which I have once failed.
159. Turning over the leadership of a group to someone who is better for the job than I.

160. Being an official or a leader.
161. Actively supporting a movement to correct a social evil.
162. Letting loose and having a good cry sometimes.

163. Taking frequent rest periods when working on any project.
164. Being the only couple on the dance floor when everyone is watching.
165. Imagining situations in which I am a great hero.

166. Driving fast.
167. Talking about music, theater or other art forms with people who are interested in them.
168. Controlling my emotions rather than expressing myself impulsively.

169. Catching a reflection of myself in a mirror or window.
170. Lending my things to other people.
171. Carrying a good luck charm like a rabbit's foot or a four-leaf clover.

172. Making my bed and putting things away every day before I leave the house.
173. Going to a party or dance with a lively crowd.
174. Managing a store or business enterprise.

175. Seeking to explain the behavior of people who are emotionally disturbed.

176. Going to scientific exhibits.
177. Chewing or popping gum.
178. Reading novels and magazine stories about love.

179. Having others offer their opinions when I have to make a decision.
180. Losing myself in hard thought.
181. Accepting criticism without talking back.

182. Doing something very difficult in order to prove I can do it.
183. Pointing out someone else's mistakes when they point out mine.
184. Having lots of friends who come to stay with us for several days during the year.

185. Playing practical jokes.
186. Doing things a different way every time I do them.
187. Keeping to a regular schedule, even if this sometimes means working when I don't really feel like it.

188. Quitting a project that seems too difficult for me.
189. Listening to older persons tell about how they did things when they were young.
190. Organizing a protest meeting.

191. Getting my friends to change their social, political, or religious beliefs.
192. Yelling with excitement at a ball game, horse race, or other public event.
193. Having something to do every minute of the day.

194. Speaking before a large group.
195. Imagining how it would feel to be rich and famous.
196. Playing rough games in which someone might get hurt.

197. Finding out how different languages have developed, changed, and influenced one another.
198. Letting my reasoning be guided by my feelings.
199. Dressing carefully, being sure that the colors match and the various details are exactly right.

200. Taking care of youngsters.

**Legend:** **L** – if the item describes an activity or event that you would like, enjoy, or find more pleasant than unpleasant.

**D** – if the item describes an activity or event that you would dislike, reject, or find more unpleasant than pleasant.

201. Having a close friend who ignores or makes fun of superstitious beliefs.
202. Shining my shoes and brushing my clothes every day.
203. Giving up whatever I'm doing rather than miss a party or other opportunity for a good time.

204. Fixing light sockets, making curtains, painting things, etc., around the house.
205. Reading stories that try to show what people really think and feel inside themselves.
206. Collecting data and attempting to arrive at general laws about the physical universe.

207. Sketching or painting.
208. Daydreaming about being in love with a particular movie star or entertainer.
209. Having people fuss over me when I'm sick.

210. Engaging in mental activity.
211. Making a fuss when someone seems to be taking advantage of me.
212. Choosing difficult tasks in preference to easy ones.

213. Apologizing when I've done something wrong.
214. Going to the park or beach only at times when noone else is likely to be there.
215. Questioning the decisions of people who are supposed to be authorities.

216. Eating my meals at the same hour each day.
217. Doing things according to my mood, without following any plan.
218. Doing something over again, just to get it right.

219. Disregarding a supervisor's directions when they seem foolish.
220. Talking someone into doing something I think ought to be done.
221. Trying to improve my community by persuading others to do certain things.

222. Being with people who seem always to be calm, unstirred, or placid.
223. Giving all of my energy to whatever I happen to be doing.
224. Being the center of attention at a party.

225. Setting myself tasks to strengthen my mind, body, and will power.
226. Skiing on steep slopes, climbing high mountains, or exploring narrow underground caves.
227. Learning more about the work of different painters and sculptors.
228. Speaking or acting spontaneously.

229. Imagining the kind of life I would have if I were born at a different time in a different place.
230. Talking over personal problems with someone who is feeling unhappy.
231. Going ahead with something important even though I've just accidentally walked under a ladder, broken a mirror, etc.

232. Keeping my room in perfect order.
233. Being with people who are always joking, laughing, and out for a good time.
234. Being treasurer or business manager for a club or organization.

235. Imagining what it will be like when rocket ships carry people through space.
236. Reading scientific theories about the origin of the earth and other planets.
237. Eating so much I can't take another bite.

238. Listening to my friends talk about their love-life.
239. Receiving advice from the family.
240. Solving puzzles that involve numbers or figures.

241. Taking the part of a servant or waiter in a play.
242. Sacrificing everything else in order to achieve something outstanding.
243. Having my mistakes pointed out to me.

244. Going on a vacation to a place where there are lots of people.
245. Fighting for something I want, rather than trying to get it by asking.
246. Avoiding any kind of routine or regularity.

247. Organizing my work in order to use time efficiently.
248. Avoiding some things because I'm not sure I'll be successful at it.
249. Carrying out orders from others with snap and enthusiasm.

250. Directing other people's work.

**Legend:** **L** – if the item describes an activity or event that you would like, enjoy, or find more pleasant than unpleasant.

**D** – if the item describes an activity or event that you would dislike, reject, or find more unpleasant than pleasant.

251. Being a foreign ambassador or diplomat.
252. Seeing sad or melodramatic movies.
253. Avoiding things that require intense concentration.

254. Telling jokes or doing tricks to entertain others at a large gathering.
255. Pretending I am a famous movie star.
256. Swimming in rough, deep water.

257. Studying the development of English or American literature.
258. Being guided by my heart rather than by my head.
259. Making my handwriting decorative or unusual.

260. Taking care of someone who is ill.
261. Finding out which days are lucky for me, so I can hold off important things to do until then.
262. Having a special place for everything and seeing that each thing is in its place.

263. Doing something serious with my leisure time instead of just playing around with the crowd.
264. Learning how to raise attractive and healthy plants, flowers, vegetables, etc.
265. Thinking about the meaning of eternity.

266. Reading about how mathematics is used in developing scientific theories, such as explanations of how the planets move around the sun.
267. Walking along a dark street in the rain.
268. Being romantic with someone I love.

269. Having people talk to me about some personal problem of mine.
270. Following through in the development of a theory, even though it has no practical applications.
271. Telling others about the mistakes I have made and the sins I have committed.

272. Picking out some hard task for myself and doing it.
273. Concealing my mistakes from others whenever possible.
274. Inviting a lot of people home for a snack or party.

275. Proving that an instructor or superior is wrong.
276. Staying in the same circle of friends all the time.
277. Striving for precision and clarity in my speech and writing.
278. Giving up on a problem rather than doing it in a way that may be wrong.

279. Having friends who are superior to me in ability.
280. Influencing or controlling the actions of others.
281. Converting or changing the views of others.

282. Being unrestrained and open about my feelings and emotions.
283. Doing things that are fun but require lots of physical exertion.
284. Doing things which will attract attention to me.

285. Thinking about how to become the richest and cleverest financial genius in the world.
286. Being extremely careful about sports that involve some danger like sailing, hunting, or camping.
287. Reading editorials or feature articles on major social issues.

288. Making up my mind slowly, after considerable deliberation.
289. Trying out different ways of writing my name, to make it look unusual.
290. Providing companionship and personal care for a very old helpless person.

291. Going to a fortune-teller, palm reader or astrologer for advice on something important.
292. Keeping a calendar or notebook of the things I have done or plan to do.
293. Limiting my pleasures so that I can spend all of my time usefully.

294. Being efficient and successful in practical affairs.
295. Concentrating so hard on a work of art or music that I don't know what's going on around me.
296. Studying rock formations and learning how they developed.

297. Reading in the bathtub.
298. Reading about the love affairs of movie stars and other famous people.
299. Being with someone who always tries to be sympathetic and understanding.

300. Working out solutions to complicated problems, even though the answers may have no apparent, immediate usefulness.

# Appendix C

## Student Questionnaire

# APPENDIX C

## STUDENT QUESTIONNAIRE

NAME________________________________________ AGE__________

HIGH SCHOOL________________________________________

FATHER'S OCCUPATION (Please be specific, and tell exactly what he is or does)

________________________________________

________________________________________

MOTHER'S OCCUPATION________________________________________

HOW LONG HAVE YOU ATTENDED THIS HIGH SCHOOL?__________________

### Instructions

The questions below are either multiple choice questions or questions requiring you to write in an answer. For the multiple choice questions, you are simply to encircle the number in front of the one best answer for you as a person. For the others you are to write your answers in the spaces provided. Your answers will not be known to any teachers or administrators in your school and will not affect your grades or your record in any way. They will be used solely to analyze how the senior class as a whole feels about problems and issues related to this school and the students in it. A questionnaire is the best way to assure that each and every student has the same opportunity to express his feelings about such matters. Please take advantage of this opportunity and answer all questions carefully, completely, and honestly.

1. In general, how happy have you been with the experiences you have had at this high school? (By "In general" we mean all your experiences at this high school: in your classes, in high school activities outside of classes, with other students - anything connected with high school.)

   1. Very happy.
   2. Happy.
   3. Unhappy.
   4. Very unhappy.

2. If money were no problem, how much additional education or training would you like to have after you graduate from high school?

   1. No additional education or training beyond high school.
   2. Junior College (two years after high school).
   3. Four years of college and the B.A. (Bachelor's) degree.
   4. Four years of college leading to the Bachelor's degree plus post-graduate work or futher work in a professional school.
   5. One year of business school, trade school, or technical school.
   6. Two years of business school, trade school, or technical school.
   7. Three or more years of business school, trade school, or technical school.
   8. Other (Please explain)________________________________________

3. (Ignore this question if your answer to the above question was alternative #1; otherwise, please answer.)
How likely do you think it is that you will actually obtain and successfully complete the additional education or training mentioned above?

   1. Very likely.
   2. Likely.
   3. Somewhat unlikely.
   4. Very unlikely.

4. If you could be remembered here at school for one of the three things below, which one would you want it to be?

   1. Brilliant student.
   2. Athletic star.
   3. Most popular.
   4. Leader in activities.

5. What does it take to get in with the leading crowd in this school? (Please describe briefly here)________________________________________

6. Would you say you are a part of the leading crowd?

   1. Yes.
   2. No.

7. If your answer to the above is "no," would you like to be part of the leading crowd?

   1. Yes.
   2. No.
   3. Don't care.

8. How much education or training has your father had?
   1. 1-4 years of schooling.
   2. 5-8 years of schooling.
   3. Some high school work, but did not graduate.
   4. Four years of high school work and the diploma.
   5. About 2 years of college.
   6. Four years of college and the B.A. (Bachelor's) degree.
   7. Four years of college plus post graduate work or further work in a professional school.
   8. High school graduation plus one year of business school, trade school, or technical school.
   9. High school graduation plus two or more years of business school, trade school, or technical school.
   10. Other (Please explain)________________________________________

9. How much education or training has your mother had?

   1. 1-4 years of schooling.
   2. 5-8 years of schooling.
   3. Some high school work, but did not graduate.
   4. Four years of high school work and the diploma.
   5. About 2 years of college.
   6. Four years of college and the B.A. (Bachelor's) degree.
   7. Four years of college plus post-graduate work or further work in a professional school.
   8. High school graduation plus one year of business school, trade school, or technical school.
   9. High school graduation plus two or more years of business school, trade school, or technical school.
   10. Other (Please explain)______________________________

   ______________________________________________

10. Encircle the number before the statement that comes closest to your feelings about yourself.

    1. I don't like myself the way I am; I'd like to change completely.
    2. There are many things I'd like to change in myself.
    3. I'd like to stay very much the same; there is very little I would change.

11. Some students feel very much at home in their high school while others do not. Have you as a person had any difficulty in adjusting to the kind of environment that exists in your high school?

    1. Much difficulty.
    2. Some difficulty.
    3. Very little difficulty.
    4. No difficulty at all.

Read each of the following statements and then encircle the number in front of the answer that best expresses how you feel about the statement.

12. My parents are pushing me to study hard and earn good grades.

    1. Strongly agree.
    2. Agree.
    3. Disagree.
    4. Strongly disagree.

13. I feel that I would be better off at some other high school rather than this one.

    1. Strongly agree.
    2. Agree.
    3. Disagree.
    4. Strongly disagree.

14. The only reason I am staying in school is that a high school diploma is supposed to be important for getting a job.

    1. Strongly agree.
    2. Agree.
    3. Disagree.
    4. Strongly disagree.

15. My high school years have been a happy time for me.

    1. Strongly agree.
    2. Agree.
    3. Disagree.
    4. Strongly disagree.

16. I don't hope for any more from the future than a decent, steady job that will take care of the basic needs of myself and my family.

    1. Strongly agree.
    2. Agree.
    3. Disagree.
    4. Strongly disagree.

17. There are times when I feel that I just don't belong in this high school.

    1. Strongly agree.
    2. Agree.
    3. Disagree.
    4. Strongly disagree.

## Instructions for the Next Items

Most of us have some ideas and feelings about the kinds of things that would be important to us when we are adults and are on our own. On the following page are some statements which describe some of these things. Please:

1. read over all of the statements first,

2. place a check mark ( ✓ ) in front of the FOUR statements that describe the four things that would be most important for you as an adult.

3. read over again the four statements you have checked and put a second check mark (✓✓ ) in front of the statement you feel would be the very most important of all those listed for you as an adult.

_____Living a life that has lots of opportunities for good times.

_____Making some kind of contribution that has real signficance to society in general.

_____Working hard to achieve a fairly high standard of living for oneself and one's family.

_____Living the kind of life that offers many opportunities to pursue intellectual interests.

_____Having the time and money to pursue enjoyable hobbies or sports.

_____Achieving or excelling in some field in a way that brings respect and approval from other people.

_____Getting so interested and involved in one's line of work that one tends to forget oneself and live for it alone.

_____Having the kind of job that pays well enough so that one can enjoy some of the luxuries of life.

_____Having strong religous beliefs that really exert an important influence in one's life.

_____Having an active social life with many opportunities for having fun with friends and acquaintances.

_____Having the kind of occupation that has some status and importance in the minds of other people.

_____Having the time and opportunity to maintain and enjoy one's cultural interests (for example, music, art, poetry, good literature, etc.)

_____Organizing one's life so that there are many opportunities to travel to different and interesting places.

_____Having clear-cut and high standards of right and wrong and living up to them faithfully.

_____Being a good parent and having a family life that is close and satisfying.

_____Living the kind of life that has many opportunities for new experiences.

_____Making important and widely acknowledged contributions to one's profession.

## APPENDIX D

## NEED-PRESS SCALE DEFINITIONS FOR THE HIGH SCHOOL CHARACTERISTICS INDEX AND STERN ACTIVITIES INDEX*

1. Abasement - Assurance: self-depreciation versus self-confidence.
2. Achievement: striving for success through personal effort.
3. Adaptability - Defensiveness: acceptance of criticism versus resistance to suggestion.
4. Affiliation - Rejection: friendliness versus unfriendliness.
5. Aggression - Blame Avoidance: hostility versus its inhibition.
6. Change - Sameness: flexibility versus routine.
7. Conjunctivity - Disjunctivity: planfulness versus disorganization.
8. Counteraction - Inferiority Avoidance: restriving after failure versus withdrawal.
9. Deference - Restiveness: respect for authority versus rebelliousness.
10. Dominance - Tolerance: ascendancy versus forbearance.
11. Ego Achievement: striving for power through social action.
12. Emotionality - Placidity: expressiveness versus restraint.
13. Energy - Passivity: effort versus inertia.
14. Exhibitionism - Inferiority Avoidance: attention-seeking versus shyness.
15. Fantasied Achievement: daydreams of extraordinary public recognition.
16. Harm Avoidance - Risktaking: fearfulness versus thrill-seeking.
17. Humanities, Social Science: interests in the Humanities and the Social Sciences.
18. Impulsiveness - Deliberation: impetuousness versus reflection.
19. Narcissism: vanity.
20. Nurturance - Rejection: helping others versus indifference.
21. Objectivity - Projectivity: detachment versus superstition or suspicion.
22. Order - Disorder: compulsive organization of details versus carelessness.
23. Play - Work: pleasure-seeking versus purposefulness.
24. Practicalness - Impracticalness: interest in practical activities versus indifference.
25. Reflectiveness: introspective contemplation.
26. Science: interests in the Natural Sciences.
27. Sensuality - Puritanism: interest in sensory and esthetic experiences.
28. Sexuality - Prudishness: heterosexual interests versus their inhibition.
29. Supplication - Autonomy: dependency versus self-reliance.
30. Understanding: intellectuality.

*Items in both instruments are so arranged that the number of the scale corresponds to the number of the first item in that scale, and every 30th item thereafter is also in the scale. For example, the items in the Affiliation-Rejection scale (#4) for both instruments are items 4, 34, 64, 94, 124, 154, 184, 214, 244, and 274. High scores in every case are associated with the left-hand term.

# APPENDIX E

## HIGH SCHOOL CHARACTERISTICS INDEX: FACTOR SCORES

### 1. Intellectual Climate

Eight of the eleven HSCI factors covary together to define the overall dimensions of the intellectual climate. Among them are represented the more conventional aspects of the academic program, including (a) staff and facilities, (b) standards of achievement set by students as well as faculty, and (c) opportunities for the development of self-assurance. In addition to these three, the intellectual climate is also marked, as we shall see below, by (d) non-custodial student personnel practices and (e) an absence of vocationalism.

Work-Play.*
This is an inversion of the Play-Work factor (see area 11 below). It reflects an absence of activities associated with dating, athletics, and other forms of collegiate play or amusement. Score: 40-Score Sum for Play-Work.

Non-Vocational Climate.*
This factor is also an inversion (see area 11 below). In its reversed form the items reflect opportunities to engage in theoretical, artistic, and other "impractical" activities. Other items imply an absence of expectation, coercion, or demands for student conformity to conventional values. Score: 50-Score Sum for Vocational Climate.

Aspiration Level.
A high score on this factor indicates that the school encourages students to set high standards for themselves in a variety of ways. These include opportunities for students to participate in decision-making processes involving the administration of the school and administrative receptivity to change and innovation, thus implying that a student's efforts to make some impact on his environment have some probability of being successful. But a high level of aspiration is also encouraged by introducing students to individuals and ideas likely to serve as models of intellectual and professional achievement. Score Sum: Counteraction, Change, Fantasied Achievement, Understanding.

Intellectual Climate.
All of the various items contributing to this factor reflect the qualities of staff and plant specifically devoted to scholarly activities in the humanities, arts, and social sciences. Score Sum: Reflectiveness, Humanities-Social Sciences, Sensuality, Understanding, Fantasied Achievement.

Student Dignity.
This factor is associated with institutional attempts to preserve student freedom and maximize personal responsibility. Schools with high scores on this factor tend to regulate student conduct by means other than legislative codes or administrative fiat. There is a minimum of coercion and students are generally treated with the same level of respect accorded any mature adult. Score Sum: Objectivity, Assurance*, Tolerance*.

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*Reversed scores (See Need-Press Scale Definitions, other factor scores.)

Academic Climate.

This factor stresses academic excellence in staff and facilities in the conventional areas of the natural sciences, social sciences, and the humanities. Score Sum: Humanities-Social Sciences, Science.

Academic Achievement.

Schools high in this factor set high standards of achievement for their students. Course work, examinations, honors, and similar devices are employed for this purpose. Score Sum: Achievement, Energy, Understanding, Counteraction, Conjunctivity.

Self-Expression.

The last of the factors in this area is concerned with opportunities offered to the student for the development of leadership potential and self assurance. Among the activities serving this purpose are public discussions and debates, projects, student drama and musical activities, and other forms of participation in highly visible activities. Score Sum: Ego Achievement, Emotionality, Exhibitionism, Energy.

## 11. Non-Intellectual Climate

This area shares the Self-Expression factor with the preceding one. The highest loadings, however, are connected with three factors involving a high level of organization of student affairs, both academic and social. The remaining two factors are associated with student play and an emphasis on technical and vocational courses.

Self-Expression.

See area 1 above.

Group Life.

The four scales on this factor are concerned with various forms of mutually supportive group activities among the student body. These activities are of a warm, friendly character, more or less typifying adolescent togetherness, but the items also reflect a more serious side to this culture as represented in activities devoted to the welfare of fellow students and less fortunate members of the community. Score Sum: Affiliation, Supplication, Nurturance, Adaptability.

Academic Organization.

The various components of this factor may be regarded as the environmental counterparts of the needs for orderliness and submissiveness in the individual. High scores on this factor are achieved by institutions which stress a high degree of organization and structure in the academic environment. Score Sum: Blame-Avoidance*, Order, Conjunctivity, Deliberation*, Deference, Narcissism.

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*Reversed scores (See Need-Press Scale Definitions, other factor scores.)

Social Form.

In some respects this factor represents the formal institutionalization of those activities represented in the Group Life factor. There is in fact considerable overlap between those two factors, but this minimizes the friendly aspects of the Group Life factor while stressing its welfare components. Schools characterized by this factor also offer opportunities for the development of social skills of a formal nature and in some respects suggest the finishing school counterpart of the vocational climate represented in the Vocational Climate factor below. Score Sum: Narcissism, Nurturance, Adaptability, Dominance, Play.

Play-Work.

Schools high in this factor offer opportunities for participation in a form of school life reminiscent of the popular culture of the 1920's. These are the institutions sometimes referred to as the fountains of knowledge where students gather to drink. Score Sum: Sexuality, Risktaking*, Play, Impulsiveness.

Vocational Climate.

The last of the non-intellectual factors is also shared with the Intellectual Climate area. The items of the factor emphasize practical, applied activities, the rejection of aesthetic experience, and a high level of orderliness and conformity in the student's relations to the faculty, his peers, and his studies. Score Sum: Practicalness, Puritanism*, Deference, Order, Adaptiveness.

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*Reversed scores (See Need-Press Scale Definitions, other factor scores.)

## Appendix F

School Standard Deviations for the 30 Scales of the High School Characteristics Index

| Scale | School Standard Deviations | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 1. Abasement-Assurance | 2.14 | 2.17 | 2.01 | 2.27 | 1.99 | 1.67 | 2.11 | 2.25 | 2.07 | 2.09 | 2.22 |
| 2. Achievement | 1.60 | 1.74 | 1.86 | 1.85 | 1.86 | 2.13 | 1.76 | 1.88 | 1.85 | 1.75 | 1.72 |
| 3. Adaptability-Defensiveness | 1.40 | 1.70 | 1.67 | 1.54 | 1.43 | 1.49 | 1.63 | 1.58 | 1.46 | 1.51 | 1.65 |
| 4. Affiliation-Rejection | 2.10 | 2.01 | 2.16 | 2.15 | 2.10 | 2.15 | 2.05 | 2.25 | 1.99 | 1.84 | 1.44 |
| 5. Aggression-Blame Avoidance | 2.19 | 2.35 | 2.33 | 2.34 | 2.19 | 2.44 | 2.23 | 2.45 | 2.50 | 2.24 | 1.37 |
| 6. Change-Sameness | 1.73 | 1.49 | 1.40 | 1.55 | 1.44 | 1.35 | 1.49 | 1.55 | 1.48 | 1.67 | 1.48 |
| 7. Conjunctivity-Disjunctivity | 2.18 | 2.40 | 2.17 | 2.35 | 2.15 | 2.25 | 2.26 | 2.21 | 2.39 | 2.05 | 2.01 |
| 8. Counteraction-Inferiority Avoidance | 1.76 | 1.64 | 1.52 | 1.62 | 1.72 | 1.47 | 1.51 | 1.66 | 1.58 | 1.70 | 1.65 |
| 9. Deference-Restiveness | 1.57 | 1.60 | 1.63 | 1.54 | 1.45 | 1.53 | 1.62 | 1.45 | 1.60 | 1.41 | 1.48 |
| 10. Dominance-Tolerance | 1.84 | 1.86 | 2.08 | 2.04 | 1.86 | 2.[illegible] | 1.67 | 2.08 | 1.89 | 1.71 | 1.91 |
| 11. Ego Achievement | 2.04 | 1.90 | 1.95 | 2.07 | 1.89 | 2.03 | 1.97 | 2.19 | 1.96 | 2.05 | 1.93 |
| 12. Emotionality-Placidity | 1.52 | 1.56 | 1.55 | 1.50 | 1.50 | 1.36 | 1.50 | 1.60 | 1.55 | 1.61 | 1.40 |
| 13. Energy-Passivity | 2.16 | 2.06 | 2.23 | 2.34 | 2.22 | 2.24 | 2.26 | 2.59 | 2.07 | 2.29 | 2.20 |
| 14. Exhibitionism-Inferiority Avoidance | 1.88 | 1.70 | 1.81 | 2.06 | 1.83 | 1.83 | 1.89 | 1.89 | 1.86 | 1.73 | 1.71 |
| 15. Fantasied Achievement | 1.50 | 1.48 | 1.34 | 1.44 | 1.38 | 1.52 | 1.68 | 1.51 | 1.49 | 1.47 | 1.42 |
| 16. Harm Avoidance-Risktaking | 1.54 | 1.55 | 1.69 | 1.61 | 1.56 | 1.61 | 1.46 | 1.69 | 1.46 | 1.38 | 1.71 |
| 17. Humanities, Social Science | 1.62 | 1.75 | 1.68 | 1.92 | 1.83 | 2.14 | 1.89 | 2.16 | 1.80 | 2.00 | 1.98 |
| 18. Impulsiveness-Deliberation | 1.59 | 1.49 | 1.74 | 1.58 | 1.57 | 1.53 | 1.66 | 1.65 | 1.52 | 1.70 | 1.79 |
| 19. Narcissism | 1.88 | 1.99 | 2.12 | 2.01 | 1.78 | 2.30 | 1.79 | 1.94 | 2.27 | 1.86 | 1.21 |
| 20. Nurturance-Rejection | 2.00 | 2.09 | 2.21 | 2.29 | 2.25 | 2.24 | 2.09 | 2.26 | 2.06 | 1.93 | 2.05 |
| 21. Objectivity-Projectivity | 2.38 | 2.66 | 2.38 | 2.49 | 2.29 | 1.91 | 2.83 | 2.55 | 2.46 | 2.33 | 2.29 |
| 22. Order-Disorder | 1.55 | 1.61 | 1.76 | 1.80 | 1.75 | 1.93 | 1.55 | 1.81 | 1.60 | 1.47 | 1.42 |
| 23. Play-Work | 1.80 | 1.72 | 1.66 | 1.86 | 1.80 | 1.68 | 1.90 | 1.83 | 1.77 | 1.71 | 1.55 |
| 24. Practicalness-Impracticalness | 1.63 | 1.72 | 1.31 | 1.63 | 1.63 | 1.52 | 1.55 | 1.63 | 1.78 | 1.59 | 1.41 |
| 25. Reflectiveness | 1.92 | 1.94 | 1.83 | 1.98 | 1.68 | 1.70 | 1.91 | 2.20 | 1.81 | 2.03 | 1.91 |
| 26. Science | 1.85 | 1.82 | 1.99 | 2.06 | 1.83 | 1.94 | 1.99 | 2.05 | 1.98 | 1.68 | 1.85 |
| 27. Sensuality-Puritanism | 1.64 | 1.62 | 1.49 | 1.70 | 1.75 | 1.78 | 1.51 | 1.74 | 1.57 | 1.75 | 1.92 |
| 28. Sexuality-Prudishness | 1.66 | 1.77 | 1.60 | 1.80 | 1.74 | 1.64 | 1.89 | 1.67 | 1.63 | 1.76 | 1.99 |
| 29. Supplication-Autonomy | 2.07 | 2.06 | 1.92 | 2.07 | 2.15 | 1.98 | 1.99 | 2.21 | 1.85 | 2.01 | 1.97 |
| 30. Understanding | 1.80 | 1.64 | 1.82 | 1.94 | 1.80 | 1.77 | 1.61 | 1.88 | 1.74 | 1.60 | 1.90 |

## Appendix G

### School Standard Deviations for the First and Second Order Factor Scores of the High School Characteristics Index

| Scale | School Standard Deviations | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| First Order Factor Scores | | | | | | | | | | | |
| 1. Work-Play | 3.89 | 4.01 | 3.95 | 4.42 | 3.78 | 3.78 | 4.39 | 4.09 | 3.88 | 3.91 | 4.34 |
| 2. Non-Vocational Climate | 3.69 | 4.26 | 3.73 | 4.08 | 3.78 | 3.98 | 3.97 | 4.11 | 3.94 | 4.08 | 3.87 |
| 3. Aspiration Level | 3.97 | 3.62 | 3.77 | 4.10 | 3.80 | 3.50 | 3.88 | 4.19 | 3.82 | 4.25 | 3.81 |
| 4. Intellectual Climate | 5.62 | 5.66 | 5.34 | 6.48 | 5.70 | 6.54 | 5.92 | 7.02 | 5.93 | 6.39 | 6.47 |
| 5. Student Dignity | 5.19 | 5.54 | 5.31 | 5.41 | 4.80 | 4.35 | 5.48 | 5.73 | 5.03 | 5.00 | 5.37 |
| 6. Academic Climate | 2.95 | 3.03 | 3.00 | 3.48 | 3.20 | 3.61 | 3.30 | 3.74 | 3.25 | 3.00 | 3.38 |
| 7. Academic Achievement | 6.80 | 6.72 | 6.79 | 7.75 | 7.01 | 7.19 | 6.64 | 7.68 | 7.03 | 6.89 | 6.86 |
| 8. Self-Expression | 5.63 | 5.17 | 5.32 | 5.86 | 5.41 | 5.56 | 5.43 | 6.18 | 5.46 | 5.45 | 5.15 |
| 9. Group Life | 4.74 | 4.91 | 5.01 | 5.28 | 5.05 | 5.15 | 4.68 | 5.46 | 4.79 | 4.51 | 4.09 |
| 10. Academic Organization | 6.35 | 6.73 | 7.15 | 7.03 | 6.67 | 8.18 | 6.58 | 7.29 | 7.54 | 5.99 | 5.19 |
| 11. Social Form | 4.59 | 5.10 | 5.48 | 5.38 | 4.82 | 5.50 | 4.37 | 5.17 | 5.26 | 4.36 | 4.15 |
| 12. Play-Work | 3.89 | 4.01 | 3.95 | 4.42 | 3.78 | 3.78 | 4.39 | 4.09 | 3.88 | 3.91 | 4.34 |
| 13. Vocational Climate | 3.69 | 4.26 | 3.73 | 4.08 | 3.78 | 3.98 | 3.97 | 4.11 | 3.94 | 4.08 | 3.87 |
| Second Order Factor Scores | | | | | | | | | | | |
| 14. Intellectual Climate | 24.89 | 24.53 | 23.58 | 27.60 | 24.90 | 24.82 | 25.20 | 30.11 | 24.20 | 26.99 | 27.95 |
| 15. Non-Intellectual Climate | 18.99 | 20.20 | 20.73 | 21.90 | 20.21 | 23.01 | 18.89 | 21.74 | 21.70 | 17.50 | 15.76 |

## Appendix H

### School Standard Deviations for the 30 Scales of the Stern Activities Index

| Scale | School Standard Devation | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 1. Abasement-Assurance | 1.66 | 1.71 | 1.72 | 1.71 | 1.72 | 1.68 | 1.72 | 1.66 | 1.92 | 1.75 | 1.68 |
| 2. Achievement | 2.37 | 2.35 | 2.25 | 2.17 | 2.27 | 2.11 | 2.30 | 2.27 | 2.49 | 2.35 | 2.20 |
| 3. Adaptability-Defensiveness | 2.09 | 2.19 | 1.94 | 2.16 | 2.14 | 1.88 | 2.20 | 2.21 | 1.92 | 2.06 | 2.19 |
| 4. Affiliation-Rejection | 2.30 | 2.37 | 2.32 | 2.24 | 2.23 | 2.12 | 2.14 | 2.53 | 2.24 | 2.56 | 2.29 |
| 5. Aggression-Blame Avoidance | 2.55 | 2.48 | 2.29 | 2.63 | 2.34 | 2.30 | 2.69 | 2.38 | 2.39 | 2.33 | 2.44 |
| 6. Change-Sameness | 1.96 | 2.07 | 2.02 | 1.86 | 1.88 | 1.93 | 1.87 | 2.07 | 1.97 | 1.97 | 2.17 |
| 7. Conjunctivity-Disjunctivity | 2.21 | 2.51 | 2.24 | 2.35 | 2.29 | 2.36 | 2.25 | 2.26 | 2.54 | 2.15 | 2.25 |
| 8. Counteraction-Inferiority Avoidance | 2.17 | 2.21 | 2.16 | 2.25 | 2.24 | 2.29 | 2.24 | 2.32 | 2.32 | 2.09 | 2.29 |
| 9. Deference-Restiveness | 2.23 | 2.23 | 2.07 | 2.23 | 2.11 | 1.96 | 2.11 | 2.06 | 2.14 | 2.06 | 2.25 |
| 10. Dominance-Tolerance | 2.47 | 2.35 | 2.37 | 2.51 | 2.49 | 2.38 | 2.51 | 2.53 | 2.52 | 2.34 | 2.26 |
| 11. Ego Achievement | 2.47 | 2.49 | 2.37 | 2.52 | 2.42 | 2.22 | 2.54 | 2.46 | 2.52 | 2.38 | 2.44 |
| 12. Emotionality-Placidity | 2.03 | 2.02 | 1.82 | 2.13 | 1.90 | 1.82 | 1.92 | 2.22 | 2.17 | 2.25 | 2.19 |
| 13. Energy-Passivity | 1.70 | 1.82 | 1.49 | 1.74 | 1.70 | 1.70 | 1.71 | 1.70 | 1.74 | 1.69 | 1.67 |
| 14. Exhibitionism-Inferiority Avoidance | 2.30 | 2.09 | 2.39 | 2.52 | 2.34 | 2.32 | 2.41 | 2.31 | 2.52 | 2.39 | 2.24 |
| 15. Fantasied Achievement | 2.24 | 2.31 | 2.44 | 2.22 | 2.49 | 2.19 | 2.27 | 2.23 | 2.44 | 2.32 | 2.28 |
| 16. Harm Avoidance-Risktaking | 2.31 | 2.37 | 2.22 | 2.47 | 2.30 | 2.43 | 2.37 | 2.46 | 2.38 | 2.21 | 2.44 |
| 17. Humanities, Social Science | 2.65 | 2.95 | 2.45 | 2.96 | 2.59 | 2.63 | 2.55 | 3.17 | 2.91 | 2.62 | 2.87 |
| 18. Impulsiveness-Deliberation | 2.03 | 1.91 | 1.94 | 2.05 | 2.00 | 1.87 | 1.95 | 2.11 | 1.90 | 1.90 | 2.10 |
| 19. Narcissism | 2.05 | 2.26 | 2.28 | 2.07 | 2.16 | 1.84 | 1.88 | 2.24 | 2.20 | 2.21 | 2.26 |
| 20. Nurturance-Rejection | 2.44 | 2.54 | 2.43 | 2.36 | 2.08 | 2.36 | 2.48 | 2.23 | 2.47 | 2.24 | 2.29 |
| 21. Objectivity-Projectivity | 1.70 | 1.77 | 1.68 | 1.74 | 1.93 | 1.91 | 1.86 | 1.95 | 1.74 | 1.95 | 1.49 |
| 22. Order-Disorder | 2.74 | 2.91 | 2.66 | 2.93 | 2.79 | 2.52 | 2.83 | 2.92 | 2.75 | 2.57 | 2.86 |
| 23. Play-Work | 2.03 | 2.35 | 2.36 | 2.31 | 2.27 | 2.15 | 2.20 | 2.63 | 2.50 | 2.23 | 2.19 |
| 24. Practicalness-Impracticalness | 2.14 | 2.35 | 1.93 | 2.43 | 1.97 | 2.11 | 2.25 | 2.40 | 2.36 | 2.28 | 2.21 |
| 25. Reflectiveness | 2.21 | 2.15 | 2.21 | 2.11 | 2.20 | 2.04 | 2.05 | 2.14 | 2.27 | 2.00 | 2.08 |
| 26. Science | 3.01 | 3.19 | 2.88 | 3.06 | 2.97 | 2.99 | 3.23 | 3.21 | 3.06 | 3.01 | 3.17 |
| 27. Sensuality-Puritanism | 1.70 | 1.89 | 1.77 | 1.87 | 1.81 | 1.72 | 1.79 | 1.91 | 1.69 | 1.86 | 1.82 |
| 28. Sexuality-Prudishness | 2.69 | 2.71 | 2.55 | 2.69 | 2.50 | 2.56 | 2.73 | 2.67 | 2.80 | 2.72 | 2.76 |
| 29. Supplication-Autonomy | 2.04 | 2.15 | 1.96 | 1.99 | 2.00 | 1.93 | 2.08 | 2.08 | 1.80 | 2.11 | 1.95 |
| 30. Understanding | 2.42 | 2.73 | 2.50 | 2.56 | 2.48 | 2.33 | 2.41 | 2.61 | 2.67 | 2.55 | 2.59 |

## Appendix I

### School Standard Deviations for the First and Second Order Factor Scores of the Stern Activities Index

| Scale | School Standard Deviations | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| First Order Factor Scores | | | | | | | | | | | |
| 1. Self-Assertion | 7.11 | 6.80 | 7.11 | 7.41 | 7.57 | 6.53 | 7.18 | 7.10 | 7.54 | 6.91 | 6.55 |
| 2. Audacity-Timidity | 6.41 | 6.78 | 5.67 | 6.61 | 7.00 | 6.39 | 7.12 | 6.46 | 6.68 | 6.46 | 6.65 |
| 3. Intellectual Interests | 7.84 | 8.84 | 8.03 | 8.58 | 8.41 | 7.67 | 7.93 | 8.96 | 8.63 | 7.54 | 8.11 |
| 4. Motivation | 6.40 | 6.97 | 6.18 | 6.66 | 6.64 | 6.20 | 6.60 | 6.86 | 7.17 | 6.59 | 6.55 |
| 5. Applied Interests | 5.30 | 6.16 | 5.49 | 6.33 | 4.93 | 5.82 | 5.95 | 6.14 | 5.77 | 5.87 | 5.77 |
| 6. Constraint-Expressiveness | 5.84 | 5.84 | 6.08 | 6.55 | 5.91 | 5.71 | 5.75 | 6.65 | 6.36 | 6.67 | 6.52 |
| 7. Diffidence-Egoism | 3.84 | 4.40 | 4.83 | 4.12 | 4.41 | 4.07 | 3.89 | 4.57 | 4.50 | 4.31 | 4.23 |
| 8. Orderliness | 6.27 | 6.93 | 6.05 | 6.79 | 6.40 | 6.24 | 6.54 | 6.76 | 6.46 | 6.07 | 6.69 |
| 9. Submissiveness | 5.96 | 6.40 | 5.70 | 6.17 | 5.76 | 5.41 | 6.03 | 5.57 | 5.96 | 5.60 | 6.00 |
| 10. Timidity-Audacity | 6.41 | 6.78 | 5.67 | 6.61 | 7.00 | 6.39 | 7.12 | 6.46 | 6.68 | 6.46 | 6.65 |
| 11. Closeness | 6.73 | 6.71 | 5.75 | 6.33 | 6.05 | 6.11 | 6.45 | 5.71 | 6.20 | 6.22 | 5.91 |
| 12. Sensuousness | 4.93 | 5.36 | 5.04 | 5.10 | 5.05 | 4.80 | 4.67 | 5.40 | 5.11 | 5.12 | 5.48 |
| 13. Friendliness | 3.33 | 3.80 | 3.78 | 3.56 | 3.49 | 3.39 | 3.39 | 4.26 | 3.69 | 3.91 | 3.67 |
| 14. Expressiveness-Constraint | 5.84 | 5.84 | 6.08 | 6.55 | 5.91 | 5.71 | 5.75 | 6.65 | 6.36 | 6.67 | 6.52 |
| 15. Egoism-Diffidence | 3.84 | 4.40 | 4.83 | 4.12 | 4.41 | 4.07 | 3.89 | 4.57 | 4.50 | 4.31 | 4.23 |
| Second Order Factor Scores | | | | | | | | | | | |
| 16. Intellectual Orientation | 25.30 | 27.58 | 24.89 | 27.86 | 27.26 | 25.02 | 26.53 | 27.07 | 28.10 | 25.50 | 25.41 |
| 17. Dependency Needs | 22.69 | 24.61 | 21.01 | 24.88 | 24.24 | 21.88 | 24.37 | 22.65 | 23.30 | 20.82 | 22.94 |
| 18. Emotional Expression | 21.99 | 22.77 | 24.46 | 23.51 | 22.52 | 22.49 | 21.25 | 24.16 | 23.52 | 23.33 | 23.44 |
| 19. Educability | 23.63 | 27.17 | 24.02 | 26.61 | 23.31 | 23.38 | 24.98 | 25.31 | 26.07 | 22.46 | 23.57 |

# APPENDIX J

## STERN ACTIVITIES INDEX: FACTOR SCORES

### 1. Intellectual Orientation

This dimension consists of five factors. Two of these involve, as might be expected, intellectual interests and achievement motivation. Two others are concerned with the maintenance of a high level of intellectual and social aggressiveness, suggesting that intellectuality is partially a function of ego strength. The last of these five factors is based primarily on items reflecting an interest in the development of useful, applied skills.

Self-Assertion.
This factor reflects a need to achieve personal power and socio-political recognition. It is based on items which emphasize political action, directing or controlling other people, and the acceptance of roles involving considerable group attention. Score Sum: Ego Achievement, Dominance, Exhibitionism, Fantasied Achievement.

Audacity-Timidity.
The second factor is more personally than socially oriented. The emphasis here is on aggressiveness in both physical activities and in interpersonal relationships. It is of interest that this personal aggressiveness should also be associated with a high level of interest in science. Score Sum: Risktaking* Fantasied Achievement, Aggression, Science.

Intellectual Interests.
The factors with the highest loadings in this dimension are based on items involving various forms of intellectual activities. These include interests in the arts as well as the sciences, both abstract and empirical. Score Sum: Reflectiveness, Humanities-Social Sciences, Understanding, Science.

Motivation.
This factor, like 1 and 2 above, represents another form in which need achievement may be expressed. Here, however, are the more conventional forms of striving most recognizable among students, involving elements of competitiveness and perseverance as well as of intellectual aspiration. Score Sum: Achievement, Counteraction, Understanding, Energy.

Applied Interests.
A high score on this factor suggests an interest in achieving success in concrete, tangible, socially acceptable activities. The items involve orderly and **conventional** applications in business and science. Score Sum: Practicalness, Science, Order.

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*Reversed scores (See Need-Press Scale Definition, other factor scores.)

## 11. Dependency Needs

This dimension is based on seven factors. It starts with the orderly aspects of Applied Interests, carries these to a more explicitly compulsive level of personal organization, and then shades off into Submissiveness. This in turn, when shorn of its more self-abasive qualities, becomes reconstituted in the last factor of this dimension as emotional closeness. A high score suggests a generally high level of dependent, submissive, socially-controlled behavior. A low score represents the inverse of this: autonomy, ascendance and non-conformity.

**Applied Interests.**
See Area 1 above.

**Constraint-Expressiveness.***
This is the inverse of the Expressiveness-Constraint factor in area 111 below. Moderately high scores suggest guardedness and emotional constriction. Extreme scores are likely to be associated with high levels of inhibition, defensiveness, and rigidity. Score: 40-Score Sum for Expressiveness-Constraint.

**Diffidence-Egoism***
Reversed score on Egoism-Diffidence (see area 111 below) reflect a lack of preoccupation with the self as a source of gratification. This implies good contact and reality testing, although very high scores may perhaps be associated with a tenuous, underdeveloped ego structure and a vague or obscurely-defined self-concept. Score: 30-Score Sum for Egoism-Diffidence.

**Orderliness.**
People with high scores on this factor have indicated a marked interest in activities stressing personal organization and deliberativeness. Although some of the items are concerned with long range planning and relatively high level time perspective, the major emphasis here is on the maintenance of ritual and routine and the avoidance of impulsive behavior. Score Sum: Conjunctivity Sameness*, Order, Deliberation*.

**Submissiveness.**
The preceding factor suggests a strong defensive system, based on rigid internal controls, for guarding against the expression of impulses. The Submissiveness factor also implies a high level of control, but one which is based on social conformity and other-directedness. The items emphasize humility, deference, getting along with others, keeping in one's place, etc. It is of interest that the Nurturance scale items should appear in this context, suggesting that the submissive individual's interest in supportive activities is based to a considerable extent on his own unexpressed need for such help. Score Sum: Adaptability, Abasement, Nurturance, Deference.

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*Reversed scores (See Need-Press Scale Definition, other factor scores.)

**Timidity-Audacity.***

This is the inverse of Audacity-Timidity described previously under Intellectual Orientation. In its reversed form it suggests a concern with any risk of danger to the self, whether physical, psychological, or social. These people avoid sports, social activities, and even fantasies which might conceivably incur harm or blame. Score: 40-Score Sum for Audacity-Timidity.

**Closeness.**

This factor is closely related to the Submissiveness factor, with which it shares both the Nurturance and Deference scales. However, the abasive and self-denying qualities implicit in the Submissiveness factor are absent here. In their place is an acceptance of items which recognize one's needs for warmth and emotional supportiveness. Score Sum: Supplication, Sexuality, Nurturance, Deference.

## 111. Emotional Expression

This dimension shares the Closeness factor with the preceding area, but the remaining five factors with loadings on this dimension stress much higher levels of social participation and emotional spontaneity.

**Closeness.**

See area 11 above.

**Sensuousness.**

The thirty items associated with this factor are concerned with activities of a sensual character. The items suggest a measure of self-indulgence along with a delight in the gratifications which may be obtained through the senses. Score Sum: Sensuality, Narcissism, Sexuality.

**Friendliness.**

Persons with high scores on this factor are indicating an interest in playful, friendly relationships with other people. These interests involve simple and uncomplicated forms of amusement enjoyed in a group setting. Score Sum: Affiliation, Play.

**Expressiveness-Constraint.**

This factor stresses emotional lability and freedom from self-imposed controls. Individuals with high scores on this factor are outgoing, spontaneous, impulsive, and uninhibited. Score Sum: Emotionality, Impulsiveness, Exhibitionism, Sexuality.

**Egoism-Diffidence.**

This factor reflects an extreme preoccupation with self. The items are concerned with appearance and comfort, as well as with fantasies in which the self obtains unusually high levels of gratification. The responses to other items in this group suggests that reality itself is interpreted in egocentric terms, but this may be not so much a matter of autistic distortion as of narcissistic egoism. Score Sum: Narcissim, Fantasied Achievement, Projectivity*.

**Self Assertion.**

See area 1 above.

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*Reversed scores (See Need-Press Scale Definition, other factor scores.)

## IV. Educability

There is a fourth dimension to be extracted in this second order space, of considerably less magnitude than the preceding three. It is of intrinsic interest to the educator, however, insofar as it combines elements of both intellectuality and submissiveness. It excludes the more self-assertive aspects of Intellectual Orientation on the one hand, and the most self-denying, inhibited aspects of Dependency Needs. Insofar as scores on this dimension reflect a strong interest in intellectual activities, coupled with orderliness and conformity, it seems likely that this factor is specifically associated with academic achievement. A score for this dimension may be obtained by summing the values for the Factors of Intellectual Interests, Motivation, Applied Interests, Orderliness, and Submissiveness. No norms are available as yet for the interpretation of this dimension, however.

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# DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
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15. ABSTRACT *(250 words max.)*

The purpose of the research was to analyze and compare high school learning environments and their impact on students. Administered to 2933 seniors of 11 high schools were the High School Characteristics Index, the Stern Activities Index, and a questionnaire designed to reveal student attitudes, values, and aspiration for future education. Results indicated that: (1) there were highly significant differences between schools for HSCI environmental "press" scores, smaller but still significant differences between student bodies for SAI "need" scores, and also distinctive differences between schools with respect to institutional need-press congruence; (2) press for achievement seems to be associated with a cluster of variables which together define a condition of strong school spirit or morale, a cluster with a recurring theme focussing on the existence of many opportunities for participation in varied school activities that bring need satisfaction and social visibility; (3) aspiration for college training is significantly related to press for achievement even with socioeconomic status and scholastic aptitude partialed out; (4) differences in student body value orientations are significantly related to many HSCI environmental "press" scores; (5) student contentment with their high school environment is significantly correlated with several HSCI scores; (6) student self-dissatisfaction is more likely to occur in school environments characterized by strong school spirit, press for achievement, and many opportunities for participation in activities; and (7) intra-individual discrepancies between student need patterns and school environmental press are significantly related to discontentment with high school.

16. RETRIEVAL TERMS *(Continue on reverse)*

High school
Learning Environments
School Environments
Student values
Student needs
Student contentment
Student self-dissatisfaction
Aspiration for future educatio

Environmental press
High School Characteristics Index
Stern Activities Index
Need-press congruence
Press for achievement
Achievement
School activities

17. IDENTIFIERS

Figure 3. ERIC Document Resume